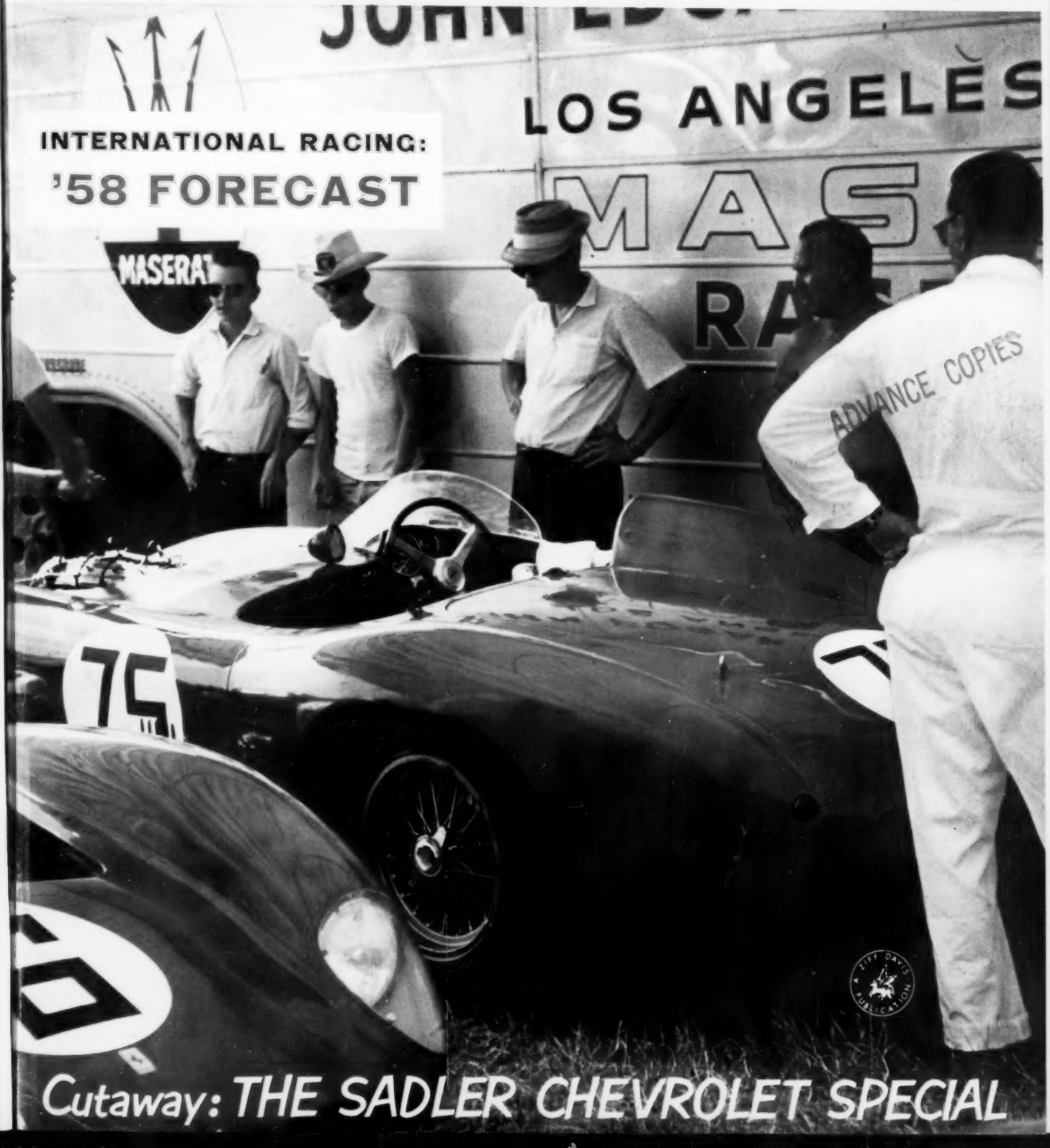
385 HORSEPOWER FROM 91 INCHES- PG 14

SPORTS CARS ILLUSTRATED

MAC 2

35¢ february 1958



INTERNATIONAL RACING:
'58 FORECAST

Cutaway: THE SADLER CHEVROLET SPECIAL

a class of its own . . .

Your first mile behind the wheel of an MGA will show you why these rugged little speedsters won the Sebring 12 Hour Grand Prix Team Trophy and placed first and second in class. And one quick look tells you the MGA is tops in smartness too. The sleek, low lines of both the Sports Roadster and its new "twin", the all-weather Sports Coupe, are a mark of distinction everywhere you go.

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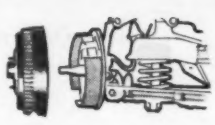

Finned drums provide efficient air cooling of brakes.

Non-slip differential sends power to rear wheel with the best traction, not poorest.

Two-stage blower delivers boost when needed, idles at cruise speeds.

Instrumentation is functional, attractive. Switches are toggle for efficient use.

Very few cars produced anywhere in the world—having an honest 5 or 6-passenger seating capacity—offer the performance and handling qualities you can enjoy in a Golden Hawk. A 289 cu. in. engine teamed with a two-stage, built-in supercharger, gives the car a weight-to-power ratio of approximately 12:1. The resulting performance is complemented by large, finned brake drums that efficiently minimize fade. The brakes are self-centering and self-energizing.

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**Studebaker-Packard Twin Traction differential.*

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Where pride of Workmanship comes first!

SPORTS CARS ILLUSTRATED

february 1958
no. 8 vol. 3

CONTENTS

You can't get next to some private equipes with a pogo stick, but John Edgar's cars are there to admire just so long as you don't bother Joe Landaker and Carroll Shelby. Tom Burnside shot the Kodachrome.

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corvette for '58

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Chevrolet Division of General Motors, Detroit 2, Michigan.

very sincerely yours:

EARLY in December came the announcement that Maserati would drop out of racing probably for good. The reason given was that the combine was "short on funds" which could probably be freely translated to read "not selling enough passenger cars." Another reason could lie in the fact that the '58 season is going to have a requirement that says gasoline and only gasoline will be used for fuel and it's an accepted fact that Maserati has been doing what's known at Bonneville as tipping the jug in order to stay ahead during the season just past. In other words the gospel according to chemistry has reached the Grand Prix scene and doses of nitro have been used in varying amounts by various teams.

The old man of Maranello has, on the other hand, been quietly experimenting with gasoline in Formula II machinery with the result that the Ferrari team is way out ahead of everyone else when it comes to cooking with gas. The way the new V6 Formula I car went at Casablanca proved that.

Tony Vandervell's people have been working like beavers to catch up but the work may be to no avail. Vandervell announced just before Christmas that he didn't see any sense in joining in a season-long two-team dice with Ferrari and that very possibly he would pull his potent Vanwalls out of contention too. He didn't say he *would* do it but he left the door open for a jump either way. The excuse that there is "no sense" in fighting out with Enzo seems to this corner to be a weak one. The door, as we said, is left open but it would seem that it was left ajar just in case Norton and the Vanwall people can't get their four-banger to put out on gasoline.

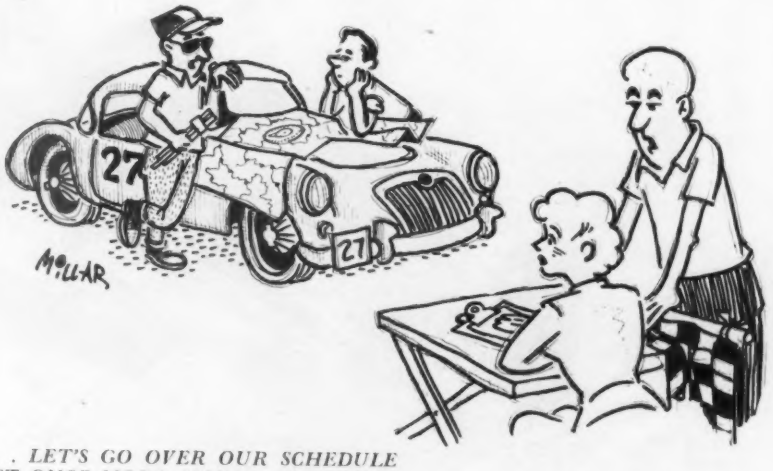
Does this leave Ferrari's number one driver winner of next year's championship by default? It could, but it doesn't necessarily follow as night the day. As of this writing it is fairly certain that David Brown will be at least getting his feet wet in Formula I. BRM is always a dark horse and that old fox Gordini is said to have gotten back into business if only in a small way. All of which makes Mr. Vandervell's reported remarks about not having any competition somewhat specious.

Mind you, Mr. Vandervell and the Orsi brothers are businessmen and it doesn't make good business sense to field a certain loser but it seems strange that the top runners of 1957 would give up the ghost for the '58 season as early as last December.

• • •

The list of missing in last November's air disaster over the Pacific carried the names of Mr. and Mrs. Robert LaMaison, head of Renault's widening enterprise in the United States. It is now, of course, certain that both were indeed lost. And the loss was not that of their family alone nor even that of Renault. Mr. LaMaison was one of the leading lights in the import field and one of those most responsible for its current rapid growth. The industry and all those connected with it will miss him.

—john christy



". . . LET'S GO OVER OUR SCHEDULE JUST ONCE MORE. NOW, IF WE LEAVE HERE AT 0730 AND MAINTAIN 37 MPH WE SHOULD ARRIVE AT POINT 'A' AT 0751 EXACTLY, THEN IF WE PROCEED TO POINT 'B' AT 42 MPH WE SHOULD CHECK IN AT 0917 ON THE NOSE AND IF . . ."

"YOU'D BETTER TELL 'EM, MAE, I HAVEN'T THE HEART. HIS WATCH IS 30 MINUTES SLOW."

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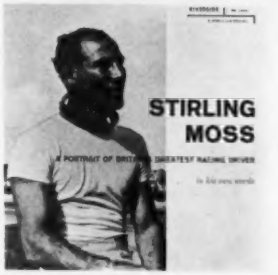
A portrait of one of the world's greatest drivers. Moss discusses a season with Mercedes-Benz, driving techniques in detail, his ratings of the top drivers and his philosophy of the sport.



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Shelby, the U. S. champion, explores the American racing scene, compares it to Europe, analyses his own driving technique and comes up with a few surprises when he rates the world's best drivers.

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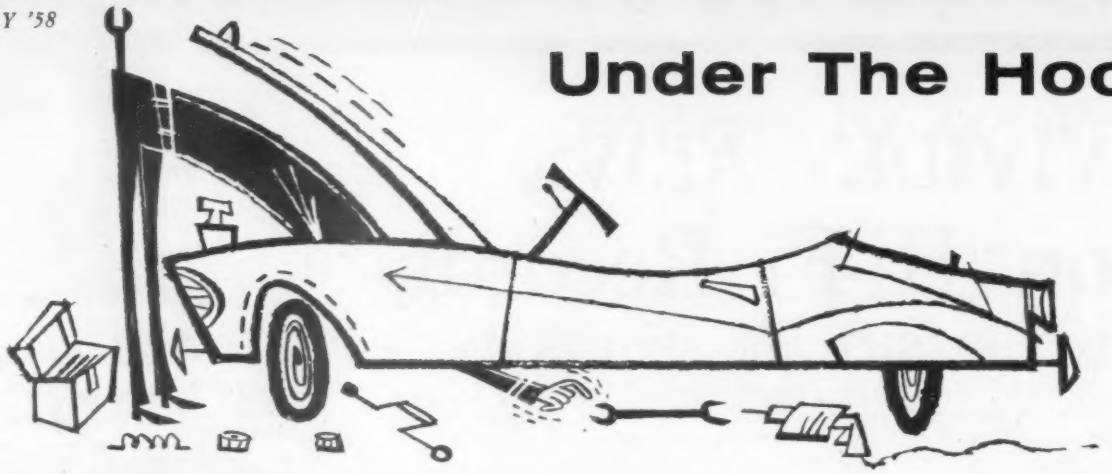
Under The Hood



Before changing to smaller rear tires, Naylor found he could just hold Loyal Katskee's 4.4 six cylinder Ferrari. They nearly dead-heated the 5 lap heat.

Front suspension incorpates Girling disc brakes and Armstrong spring-shock units. Modified Vauxhall anti-roll bar is shackled to the upper wishbone.

After all the changes the Sadler Special has already undergone (see pages 32-37), it was not at all surprising to find that the car which Bill Sadler pushed off the S.S. Florida at Nassau looked a bit different from this month's cutaway feature. After some of the things said of its appearance in the British press ("curious", "homely", "rather shabby", etc.) Bill felt that it was money well spent to have Lister's body makers pound out a new aluminum shell for him just before he left for Canada.

Two weeks after his return, he and Brian Naylor (of Lotus-Maserati fame) were on their way to Nassau for Speed Week, Brian to drive and Bill to act as owner, mechanic and pit strategist. In that two weeks, Sadler had mounted the new body to the chassis, installed Girling TR-3 disc brakes on the front hubs, lowered the steering column to give less rake (using a Jaguar 3.4 all-rubber U-joint — *very* satisfactory, says Bill), installed three Rochester twin-choke carbs to improve the power output (without getting into the cornering-flooding difficulties experienced with the four choke units), made *eight* new exhaust pipes, which end before the rear wheels in Lancia-Ferrari style (and with a noise to match), and made a new gas tank and a three gallon crankcase pan to enable Brian to drive the 250 mile main event non-stop.

Well, it was everyone's first race on the Oakes Field circuit, so such optimism was pardonable. Not to give the story of the race away in advance, (it'll be told in detail in the March issue) but the course was far, far rougher than anyone had anticipated, and it certainly took its toll.

After winning Class B honors hands down in a 5 lap heat of the Governor's Trophy Race, Brian had a full minute lead in class B on the tenth of the 15 laps in the main when a weld failed on an outboard universal joint. The subsequent thrashing around tore up the large gas tank, too much so to repair it locally. Combined with the appalling amount of tire wear, this dashed their hopes for competing in the 250 mile event so they settled for the 100 mile Nassau Memorial Trophy Race. Again the ferociously rough circuit was to do them in, for after only six laps one of the rear stub axles broke, sending a wheel flying off in one direction while Brian and the car slithered in another.

Discouraged by all these misfortunes, Bill admits that it was a long way to travel to finish only one race, but he claims he's never learned so much in so little time.

Alloy body was made by Lister's body builders. There is a strong resemblance around the air intake, although the Sadler's headlights are moved well forward.

So attractive is the car now, that a photographer from Mademoiselle *used it as a background for one of his models. Bill didn't mind at all.*

Brian Naylor prepares to fill the gas tanks. Both ends of the car swing up like this, and then can be lifted off without difficulty.

For instance, replacing the 7.00 x 16 rear tires, worn out after but twenty laps, with just scuffed-in 6.50s converted the Sadler, in Naylor's words, "from a cornering goat to a driftable proposition." The 7.00s may be necessary for putting maximum power to the ground for straight line acceleration, but what may have been lost on the starting line was more than made up for on the rough corners. Brian still complained about the ride, claiming he felt like a pea in a whistle. Bill just shrugged his shoulders, pointing out that the car is in for a lot of development work this year and that spring and damper settings will probably take a major portion of his time.

A good many parts will be strengthened; the inboard U-joints are already Spicer 1350, like the outboard ones, for instance. New gas tanks and a satisfactory means of mounting them will have to come. Girling discs, identical to Lotus Eleven front brakes will be installed at the rear. Larger diameter master cylinders, Bill has discovered, are a must when you convert to disc brakes, because the normal size ones just don't push through enough fluid to clamp on the binders in one stamp on the pedal.

If the three liter limit doesn't reach these shores, the Sadler Special will soon become a car to be reckoned with in American as well as Canadian sports car racing.

Stephen F. Wilder

letters

JAGUAR DRIVERS' CLUB

Jaguar owners are cordially invited to join the American Branch (es) of the Jaguar Drivers' Club. The club is officially recognized by the Jag factory and the RAC; as a matter of fact, Sir William Lyons is president. The main branch is in London and has over 1000 members. For further information write: Jaguar Drivers' Club, 116 Laurel Grove, Kentfield, Calif.

Gene Babon
Kentfield, Cal.

KEN'S SHIRT

The cover photograph on your December issue is very good, as usual, however, Mr. Blackwell's photo of Ken Miles raises a question.

Are the west coast drivers, either under SCCA or local group sanction, permitted to drive in clothing such as Mr. Miles displays? That is, are the drivers not held to the "shirt sleeve" rule or to the fireproof coverall regulations? Whether Mr. Miles' polo shirt is fireproof or not is not evident; however, his arms are exposed.

William M. Walsh
Bedford, N. Y.

At present, only the SCCA requires flame-proof clothing. The California Sports Car Club, of which Miles is President, recommends it but does not insist. Mr. Miles undoubtedly feels that polo shirts need not be solely for polo players.—Ed.

SWEETS FOR THE SWEET

How about stopping this "goody" stuff. "Goodies under the hood" — "Hidden goodies" etc. What the H--- is goody about a camshaft, a valve spring or a diDion rear end? It's all a bit sickening. Pretty soon sport cars will contain "adorable" or "darling features.

H. A. Morlock
Buffalo, N. Y.

They will? It's all according to who's driving, chum.—Ed.

CLASSIC HOT SHOT?

Enjoy your magazine very much, but have a question. I have searched high and low in this area for an American Austin or a Crosley Hot Shot or Super Sports—with no success. Saw one Austin roadster (American) and the owner said there were only two like it in California. Does this scarcity make such a car a classic? If not, what does make a classic? Seems everyone has his own opinion. What's yours.

Are there any Hot Shot Clubs anywhere?

Bob Sterling
Pleasant Hill, Cal.

If you couldn't afford it new, but can now; if it's representative of a school of design; if it's a limited production item; or if now it's appreciating rather than depreciating . . . you've got a classic. For Crosley Club info, write: George Drum, Service Motors, 581 Hempstead Turnpike, Elmont, N.Y.—Ed.

(Continued on page 10)

letters

the big fast four

I am as proud as the next guy of the commendable efforts of the Chrysler, Studebaker, Chevrolet, etc. attempts to turn the American automobile into a real *grand turisimo* machine, and realize that they have gone a long way, *but* . . . a few questions please.

(1) If I read my copy of *The Sports Car, Its Design and Performance,* and the specs of the cars concerned, including power, suspension, roll center and C.G., it seems very unlikely that a Plymouth Fury will out-corner an XK140. Admittedly, the XK140 isn't the best cornering vehicle in the world, particularly on slow bends, but neither is the Fury.

(2) You speak of all the money you'd have to spend to get speed equivalent to the 300-C's. How true, if you speak of possible top speed. But it is not the possible speed, in my opinion, with which we should concern ourselves. It is instead the speed at which the average, non-professional (though skilled) driver can or will drive the car. In the same issue, you state that suspensions that feel perfectly safe at speeds of 70 or 80 on the open road can feel horribly frightening at 120 or better. I, for one, would be terribly afraid to drive a 300-C at 145 or anywhere close to that, particularly if I thought I might have to haul that heavy, heavy front-end and that live, live rear-end off a straight line. I think I can find a car that no 300-C owner, in his right mind, would pass—and for considerably less than the $10,000 quoted.

(3) After stating that the supercharger on a Golden Hawk works like "a fan stuck in the end of a drain pipe," the author calls me Junior. At least I am old enough to know that there is something more to a supercharger than a fan and a drainpipe. (At least there is if this one is as good as he would have us think!)

To sum up: I am not one of the sports car snobs. I approve heartily of the progress being made at Detroit in the direction of faster, safer motoring, and I look to the future with a great deal of expectation; *but,* until I see a Fury with bucket seats, a de-chromed D-500, a few more stockers with the sensible instrumentation of the Hawks, a 100 inch or less wheelbase 300-C, and an American engine with something a little better than a single, centrally-located camshaft driving long chains of metal parts all the way to the valves through the cast iron block, I will still call them Detroit road monsters. *Fast* monsters, sure; but monsters, nonetheless, and not very safe ones at that.

While we're on the subject, let's all pray together that Chevy will use some of the excellent devices designed by their Mr. Duntov on standard Corvettes in the near future, or maybe even on a few stock Chevs. Here are the people who *could* build a real U.S. G.T. machine!

Bill Peabody
Dallas, Texas

You are entitled to your opinions re monsters, Bill — you're not alone. However, you misread our statement concern-

ing suspensions. We were referring to suspension setting, *not systems (of which, incidentally the Fury's is one of the best going). Finally, how else would you reduce that sort of blower to it's simplest terms?—Ed.*

to maintain . . .

When I think of all the hours I've spent polishing, "re-doing" and generally slaving my time away for the sole purpose of keeping my TC looking respectable, I could not help but be amused at the thought of trying the same thing on myself. "Maintenance" was a delightful bit of whimsey. I thoroughly enjoyed it.

Mrs. Lynn Lowenthal
Great Neck, N. Y.

It's about time you printed something besides how to hop up a hopped-up VW. More like Maintenance if you please.

Stan Reynolds
Coral Gables, Fla.

What was the exact address of the Heseltine domain? I have searched New York for sight of the Pierce to no avail. How can I get in touch with this remarkable chap—there are a few things I would like to discuss with him.

Robert Wallach
Yaphank, N. Y.

. . . or not

Every month I motor to the corner magazine rack and begin the ritual of pawing through the regular pile of assorted Freudian junk to get to Sports Cars Illustrated, which I have always labeled "Well Done" after each digested copy, until this month when I came onto a bit about a fellow who road tested a concours maintained female from the last century. Now I ask you, Really! Lets stick to the internal combustion type and leave the tripe to others. Your Grand Prix coverages are very well done.

A. L. Gilbert
Boston, Mass.

We're sort of partial to internal combustion types, too.—Ed.

As an enlightened college student, I am forced to rebel at the article by Mr. Dembling. I cannot see how an article like that can share the covers with Healeys, Fangio and Bonneville.

If I want to read about gals in hotel rooms and gay boys, I'll pick up any of the dozen trash magazines on the newsstand. We Brooklyn College students are notoriously short of money, and when we put down thirty-five hard earned cents for a magazine about sports cars, we expect to read about sports cars.

I learned nothing about Stutzes or Pierces and care less about early American Cookbooks. Now lets try to keep our minds out of the gutter and in the cockpit.

Carl Klass
Brooklyn, N. Y.

If that's the way you want it we will try—however, this is a family magazine.—Ed.

TECHNOTES

by ***Stephen F. Wilder***

BRAKE LINE BOTHERS

I have a Porsche which has gone about 25,000 miles. I have just relined the brakes, repacked the front wheel bearings, honed or replaced the brake and master cylinders and replaced all the rubber cups and seals. The entire system has been flushed with new heavy-duty brake fluid and bled about six times, but I still suffer a most peculiar phenomena. When I apply the brakes, either gently or strongly, the car pulls sharply to the left and the brake pedal immediately sinks about two inches, gets firm and then the car pulls equally strongly to the right. When I'm going say 60 or 70 mph, it will jump about one car width to the left if I hit them hard enough. I have checked the free pedal, I have made sure the drums were scrupulously clean, and I'm on my second can of brake fluid, I've bled the lines so many times.

Bill Chenoweth
Enid, Oklahoma

Assuming that you have bled the brakes properly, the most likely cause of your trouble would be in your right front brake hose. If it has aged or deteriorated, it will expand before the brake pistons on that side move. Simultaneously, the left front brake is working, causing the pulling to the left. When the hose finishes expanding, the pedal stops its rapid sinking and the brake pistons move, moving the brake shoes and causing pull to the right. If you replace this hose, I am sure that your trouble will vanish.

MGA and NASH METROS

What engine parts are interchangeable between the MGA and the Nash Metropolitan? I understand that they use basically the same 1500 cc B-type BMC engine.

Bud West
Bethel, Ohio

You're right, they do. The interchangeability picture on BMC assemblies is very interesting; in most cases you can bolt Nash parts right on to your MGA without fuss or worry, though sometimes the reduction in performance will be so great that such a move should only be done as a stop-gap measure. On the other hand, Metro owners can buy a vast supply of speed equipment at their nearest MG dealer.

I checked with Gus Ehrman of Hambro on this and here is the scoop as he gave it to me. There have been three different Metro engines, the earliest one being followed by the Series II and III. These correspond respectively, to the Austin A-40 Somerset, the A-40 Cambridge, and the Austin A-55 (see road test, page 38). The latter (51 bhp) in turn corresponds closely to the MG Magnette (68 bhp) and the MGA (72 bhp) and is called the BMC B-type engine.

Early Nash Metros, series I and II, can only do a bolt-on hop-up by finding some bits off the A-40 Sports (known in some circles as the A-Sporty). This won't be easy, as not many were built. In turn, Austin owners may find some necessary parts at a Nash dealer.

The current Series III Metro is almost exactly the same as the A-55 engine, being rated at 50 bhp. There are early and late versions of both these and the Magnette. The difference was created when the full-flow oil filter of the MGA and its tri-metal con-rod bearings were standardized on all three engines. This change meant a change to the MGA's crankshaft with its different oil passageways. Incidentally, BMC insist on the use of felt, not paper, oil filters and urge regular changes of them.

As well as the cranks on late model Metros, the following parts on the MGA are identical: cylinder block, rods, water pumps (but not the oil pick up, as the sumps vary in shape to clear the steering gear), pushrods and tappets (use the late-style ones only, as the early ones may jump out of place when you twist the rev-needle off the dial).

Now for the hop-up parts. BMC varies the output of the B engine by swapping around cylinder heads, intake manifolds (different number and make of carbs), valves (size), springs (stiffness and quantity), pistons (compression ratio) and finally, camshafts. A point to remember is that the MG cam does fit the other B-type blocks, but there is no provision in the latter for the drive to the mechanical tachometer. However, the TD/TF generator has a pick-up which could be used. Easier, at least for non-MGs getting the treatment, would be a small electric tach operated by the distributor.

Less hot cylinder heads can be ported and cleaned up to MG specs, but different valve guides will be necessary.

HOT MG POWER

I have recently purchased an MG TF 1500 and have just finished putting it in top shape from a mechanical standpoint. It is a neat piece of work but now I'm beginning to suffer from a recurrent disease called power-hunger. I understand that there is ample information on getting more out of the XPEG power plant but the information seems to be more illusive than ample—in short I can't find it. Can you help? I've no pretensions of racing in either production or modified SCCA categories—I just want more steam.

Stan Garland
Chicago, Illinois

Can you wait a couple of months Stan? If so, the Sports Car Press is coming up with a new book in their Sports Car Guide series concerning this very problem. The book, by SCI Editor John Christy and Karl Ludvigsen (on military leave from the Tech Editor's desk), gives full details on hauling more horses from not only the XPEG but the XPAG and the B-Type BMC (MGA) engines as well. All of this data is as the racing division at Abingdon wanted it but clarified by the authors and put into American English. It's worth waiting for.

SAVE ON ACCESSORIES — we pay postage!

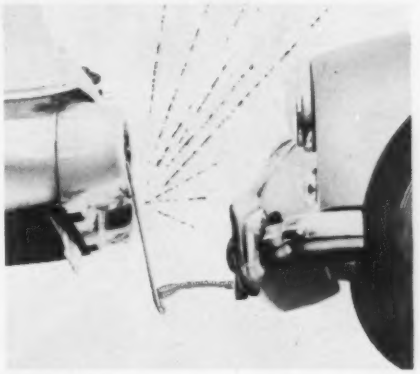
SATISFACTION GUARANTEED OR MONEY BACK

MARION'S MEANDERINGS

By Marion Weber

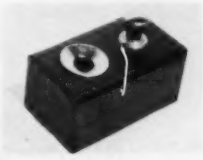
Hi there! We intended to head this page "Exclusively Yours" or some such, and what we actually meant was "Exclusively Ours", because so many of the items shown are available only at our little stand, but, in the final analysis, you don't care about exclusivity, what you want to know is "can I save some loot?" The answer is **yes**, and with perfect confidence. The other banner means just what it says, too. We have always backed everything we sell with a money-back guarantee if you don't find the grommets as advertised. Same policy will be carried on through the new year. So, order up, we want to hear from you.

GRAND PRIX GLOVES (in natural capeskin) are preferred for driving comfort, long wear. Vented back, double palms. Sizes: 6½-7½ for gals, 7½-10 for men. .....**$7.95 pr**



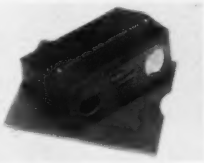
SONIC SHIELD remains on duty to protect your car from attacks by bigger autos upon its bumper and grille while you are away. Careless parkers can approach only so close, then, **Sonic Shield** lets go with a blast from your horn to warn them away. Can save many times its nominal cost by preventing damage. One bolt to tighten, one lead to clip, installs in minutes. **$14.95**

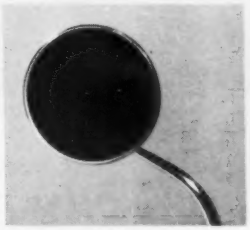
TARGA FLORIO model gloves are midnight black in hue, made from soft cape in the same style that has made the Grand Prix type famous. Sizes: 6½-7½ for gals, 7½-10 for men. .....**$8.95 pr**



ASHTRAY - LIGHTER combination is ideal for those cars not so equipped. Compact, sturdy, good looking. 6 or 12 V....**$8.95**

FOLDING BINOCULARS are just the ticket for races (add Opera, Burlesk and Bird watching, if you like). They fold to a 4" square only ¼" thick but are real binocs with good magnification .....Only **79¢**





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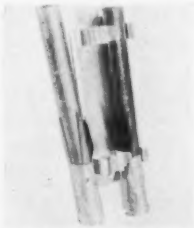
LITTLE WHEEL makes a nice present for a big wheel. Solid brass, chrome plated version of a wire spoked racing wheel. Great as paperweight or trophy. **$2.50**

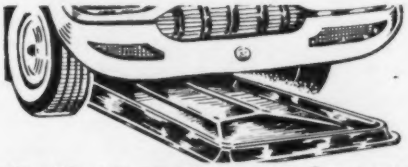
BADGE CLIP attaches to bumper and holds your club emblem securely and safely. Highly polished, no holes to drill. Fits all cars. **$1.95**



FLARE RACK mounts in luggage compartment and holds two fuses ready for any emergency. Light aluminum with spring clips, no special tools necessary. **$2.25**

FIRE EXTINGUISHER should be high on your list of necessary equipment. This tiny safety device contains chlorobromomethane for effective action against gasoline fires and will also dry wet ignition, halt vapor lock in emergencies. **$7.95 . . . Refills $1.25**

BATTERY CHARGER small enough to carry in the cubby but powerful enough to charge any battery. Avoid the dangers of push starts during cold weather. Plugs into any 110-115 V. AC outlet. **$17.95**



OIL DRIP PAN will keep your garage floor or carport neat and sanitary. Catch those almost-unnoticed drips which add up to an unsightly mess, cause oily footprints on the carpet and get you in trouble with the wife or landlord. This generous sized flexible pan is unbreakable, weatherproof and not embrittled by low temperature. Keep it clean, men. **$4.95**

THERMO-JAC for gals has a soft, warm "Nylon Fur" hood and is fully lined in quilted flannel. The hood folds to make a snugly collar and big patch pockets (with flaps) are real handy. Biggest advantage of this smart car coat: **it's machine washable!** **$19.95**

CALYPSO HAT ties under the chin for keeping the ears warm and secured under all conditions. Crown is wool jersey, brim is stitched fabric. Colors: Black, White, Red, Beige. **$4.95**

FAMOUS MITTEN is **exclusively ours.** No other car cover has ever achieved such a record of customer satisfaction. Why? Because mittens are designed to fit the shape of the car and to stay on in spite of high winds. A stout shock cord sewn into the perimeter snaps under the bumpers and holds fast, yet the mitten is easy to remove and folds into a small bundle for stowage. Protect your car's value by protecting its finish, leather, top and wood . . . get a mitten!

MG Mitten Healey Hugger Triumph Tunic Alfa Apron (Spyder)	**$17.95** **$24.50**	Lightweight Canvas Duralin (Water repellent **not** plastic)
Jaguar Jacket (XK 120) Porsche Parka VW Vest Ghia Gown	**$22.95** **$29.50**	Canvas Duralin
Jaguar Jacket (140-150) Mercedes Muff (L90-300SL) Corvette Cap Thunderbird Tepee	**$27.95** **$32.50**	Canvas Duralin

These are typical prices, write for others. State year, make and model when ordering. Semi-fitted canvas covers are available for all cars, ask about them.

ORDERING INSTRUCTIONS: We pay postage if payment accompanies order (except Grille Guard and Racks add $2.00).
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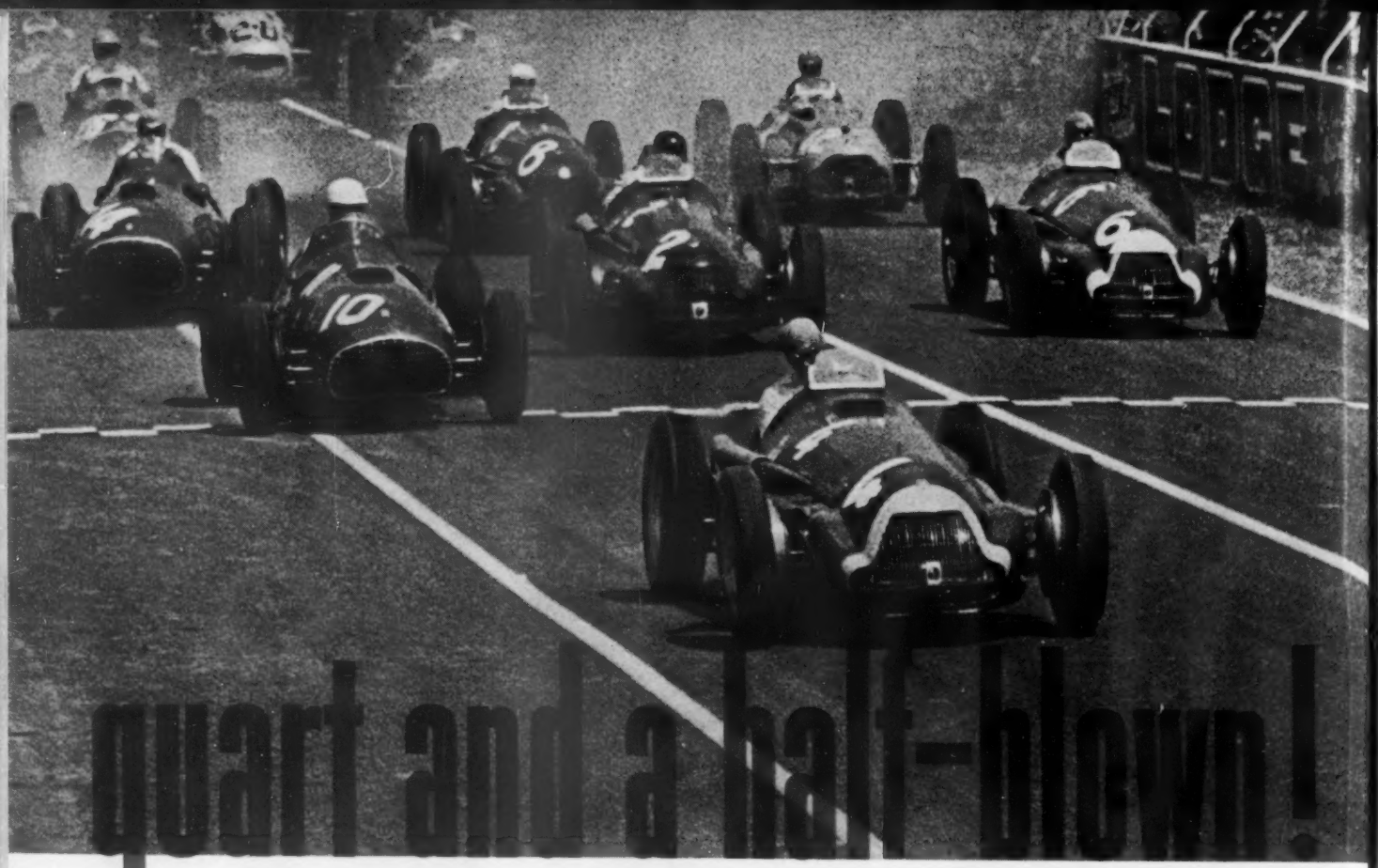


Photo: Geoffrey Goddard

The 159 Alfa and 4CLT Maserati—up to 385 hp from 91 inches!

By KARL LUDVIGSEN

RACING engines sound loud and hard by nature, but this one had a more portentous ring. The banks of the river Po echoed the crackling shriek of more than a dozen, small, supercharged machines, their shrill notes wailing as tires spun on greasily wet patches along Turin's tight Valentino Park course. It was the Italian Grand Prix of 1948: postwar racing was into full stride. Rain on the course was squally and the outlook as forecasted by the sullen brow of Guidotti, Alfa Romeo racing manager, was more of the same. Were they losing? Not at all, for the imperturbable Jean-Pierre Wimille was drifting the latest high-boost Type 158 Alfa a clear lap ahead of the pack. They just weren't holding down the place and show spots, a calamity which was practically unheard-of!

This time, as on several past occasions, the leading interloper was "Gigi" Villoresi on a 16-valve, 4-cylinder Maserati. Just two months earlier, this Offy-like engine had been bedded down in a new chassis called the Type 4CLT/48, and for the first time since the war it was a palpable threat to the Alfas. "Yes," said Guidotti to Alfa's Managing Director Dr. Alessio, "we may have this won, but next month for Monza we'll need two more cars like this one and another driver—say Taruffi . . ."

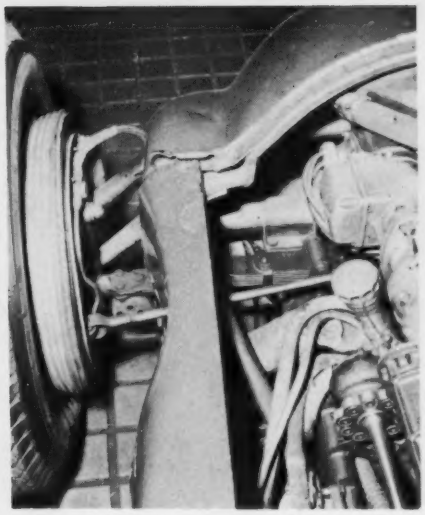
At a critical time in history Maserati (and a new car builder named Ferrari) had given Grand Prix racing a needed dose of competition, which of course was nothing new to the tough Alfa Romeo crew from Milan. Founded in 1906 and racing seriously since 1921, Alfa always carried Italian red to the fore with machines like the 1750 cc blown sixes and slim Type P's of the early thirties. Designers like Jano, Colombo and Ricart could call on Nuvolari, Varzi, Farina, Chiron and other greats to handle their machinery.

When in 1937 it was rumored that Alfa was about to produce a new car for the current Voiturette Class, or "second formula", good things were naturally expected. What was not expected was that the same car would be dominating major Grand Prix events in 1951, eight full years of racing later. Pomeroy has given due attention to the fabulous record of the Type 158 Alfa in Volume II of *The Grand Prix Car*. He says:

"In this period (1947 through 1951 only) the company made 99 separate entries in 35 races. Of these they won all but four, so they had 31 victories together with 19 second places and 15 thirds. They made fastest lap in 23 of the races and suffered only 28 retirements. Taking into account retirements, the cars raced a total of 18,153 miles under Formula I (plus 854 miles in 1946)—an average of 6,800 racing miles per car for an overall reliability factor of 81 percent. This is a record of reliability and success without parallel in motor racing history."

Keep this performance in mind while gazing at handsome showroom posters of modern racing victories. There's been nothing like it since. What's more, those Alfas were probably the cleanest, prettiest GP cars ever carved out of alloy. Small in size but developed to the limit of prewar design and postwar materials, these 91-inch straight-eights were strictly team machines. Not one was ever sold to a private owner, though not for want of customers!

Fully contemporary and directly competitive with the "Alfettas" were the four-cylinder, 16-valve Maseratis, including the 4CL, 4CLT and 4CLT/48. In complete contrast, however, the Maserati brothers depended almost entirely on the sale of their cars, as their official team entries were very occasional. As a result, Maserati cars filled out



Finned brake drums set well out in the air stream, Porsche-type trailing arms shackled to a transverse leaf spring were typical of Type 158 and 159 Alfa.

Zanardi, Alfa-Romeo's famous racing mechanic, finds plugs accessible on this otherwise complicated straight 8. Early models had one mag under exhausts.

Two Roots blowers drag cockpit air into progressively linked triple-throat Weber carbs. Straight path blasts exhaust out in shrouded headers.

the bulk of the starting grids up through 1950, a typical figure being eleven out of twenty-four starters for the 1949 Italian GP. The 4CL prefix connoted light weight, ruggedness and maneuverability, simplicity for easy maintenance, and power that was usually adequate and occasionally extraordinary.

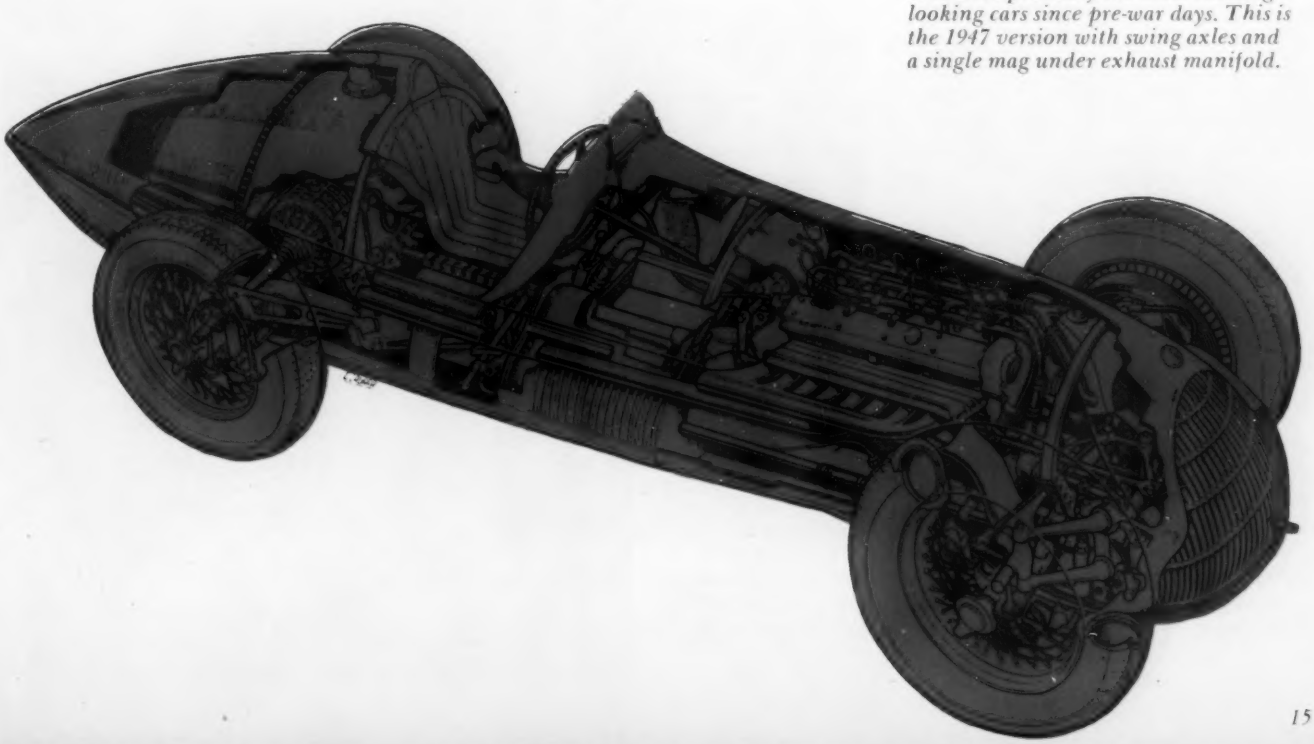
In spite of the design superiority of the Alfa Romeo, the 4CLT/48 Maserati appeared more representative of the cars that contested the first postwar Grand Prix formula, and seems to be more familiar to race fans in this country—perhaps due to the still-potent reputation of the make at Indianapolis. Sixteen-valve Masers of the latest type are gradually finding their way to these shores. George Weaver's ex-Parnell car is a frequent winner in SCCA Unlimited events, while Indy qualifying in '57 was graced by probably the purest, freshest 4CLT/48 or *San Remo* Maserati now running. It holds the 1½ liter lap record for the Indiana track, and is now sheltered by Foreign Motors Ltd. of Brooklyn.

From 1935 up to the War, the reigning Formula 2 was for 1½ liter cars, with or without blowers. Although overshadowed by the staggering achievements of Mercedes and Auto-Union during this period, it provided a sporting playground for English ERA's and assorted Maseratis, racing cars of aggressively traditional design. Right up to 1939, Alfa Romeo was the only firm to give the Germans any argument in the "heavy metal" class, but with much smaller coffers, their publicity-oriented management decided that more headlines could be made with a 91-inch machine.

By the winter of 1937—just twenty years ago—Gioiacchino Colombo had completed drawings for a brand-new 1½ liter Alfa under the designation "308". Though the overall concept was fresh and perfectly scaled to expected performance, the engine was virtually one bank of the three liter V-16 being prepared for 1938, and may actually have *predated* the larger unit.

Since in those days, the *Scuderia Ferrari* existed only to

Even without being cutaway, the Type 158s were probably the most exciting-looking cars since pre-war days. This is the 1947 version with swing axles and a single mag under exhaust manifold.



Gentlemen, choose your weapons. The cockpit of the Alfa 159A is snug, with gearshift and hand brake levers at the sides. Accelerator pedal between clutch and brake is typically Alfa, so is thoughtfulness which put drag producing mirrors inside.

race Alfas, the first cars were partially assembled and dyno tested at Ferrari's Modena factory. First to check out the new Alfetta was the *Scuderia's* head tester, Marinoni, who finally pronounced it, in June of 1938, an eminently satisfactory motor car. A month later, two out of three cars went through to take first and second in the Coppa Ciano at Leghorn, a debut which was not deceiving.

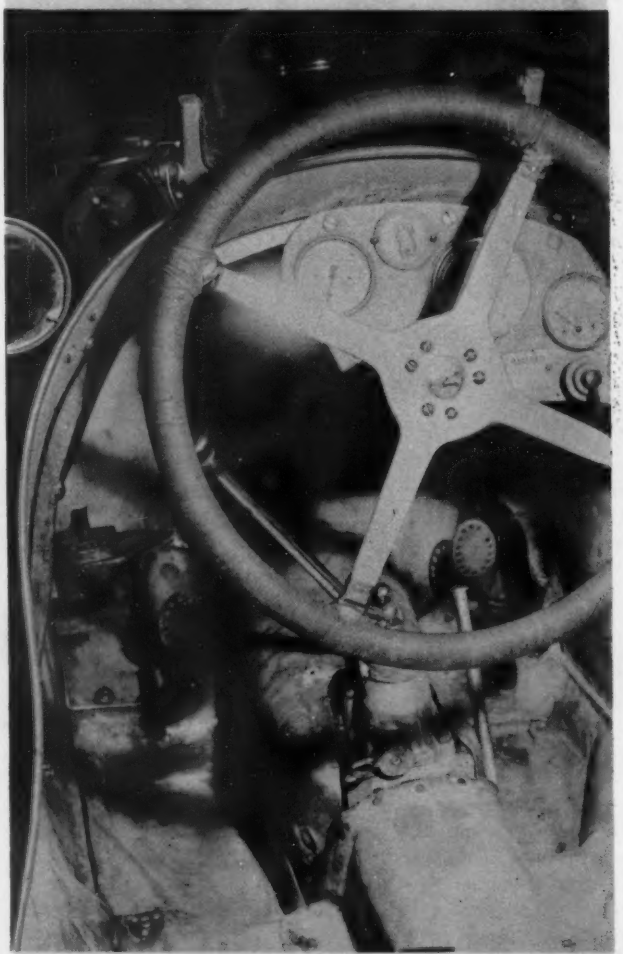
These developments were not overlooked by the Maserati brothers, whose product was elbowed back to third place in the above race. Their simple, long-stroke fours and sixes were no longer up to it, and in the fall of '38 rumor predicted a new four-cylinder Maser to enhance Italy's chances in Formula 2. Bindo Maserati announced the Type 4CL in January, 1939, mentioning that it had four valves per cylinder and optional single or two-stage superchargers. Testing in later months precluded the use of the two-stage rig for the time being, and proved the merits of the 4CL's "square" dimensions (78 x 78 mm).

Technically this car, revised in chassis, too, first raced in England; but its real baptism was at the Tripoli GP of May, 1939. Unfortunately, one Herr Adolf chose this occasion to demonstrate his interest in the 1½ liter class, sending two W165 Mercedes. They took first and second place going away. However this was only academic to Maserati, who made motoring history by retiring all three entries on the first lap. Gigi Villoresi had the satisfaction of setting fastest practice lap in a 4CL capable of 170 mph, with a spectacular, German-designed streamlined body, but his less dashing brother Emilio finished third behind the Mercs in an Alfetta, now numbered Type 158.

Farina and a 158 Alfa took on the bigger, *pukka* GP Mercedes and Auto Unions at the fast Berne course in August, jolting everybody by holding second place on the first lap and finishing sixth ahead of two of the fabled silver cars. A month later there was war in the land but the Italians, not yet involved, journeyed again in 1940 to the hot, sandy Tripoli track. Under the palms, four Alfas flung the gauntlet at a platoon of Maseratis and just got away with it, Gigi Villoresi's Maser falling to fourth after leading in the early laps. Speed of Farina's winning Alfa over the 244 miles was a fantastic 128.2 mph (Indy average that year was 14 mph less!), with one lap at 134.

(Continued on page 43)

Thinking perhaps of the distance to Modena, the owner of this 4CLT/48 placed the St. Christopher medal next to 9000 rpm mark on tachometer. Levers are central, gas pedal is not.

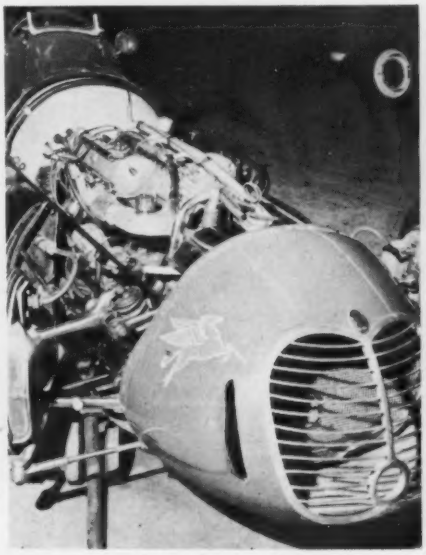


Hiding Alfetta's cloverleaf grille trademark, clip-on covers control coolant temp. Lower one blanks off the oil cooler.

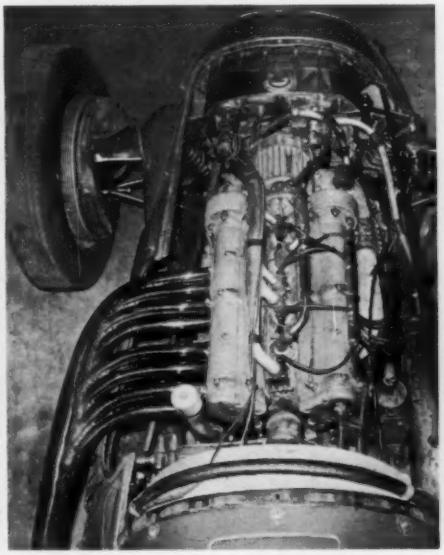
SPECIFICATIONS

ALFA ROMEO—TYPE 159	
Type	8 cyl, in line
Valve Arrangement	Inclined 45 degrees
Bore & Stroke	2.28 x 2.76 in (58 x 70mm)
Stroke/Bore ratio	1.2/1
Displacement	90.2 cu in (1479 cc)
Compression Ratio	6.5/1
Ignition	two Marelli magnetos
Carburetion	triple-throat Weber DD
Boost Pressure	3 atmospheres
Max. Power	385 bhp @ 9000 rpm
Bhp per cubic inch	4.27
Piston speed @ max. bhp	4170 fpm
Drive Train	4 speeds, Rear ends from 4 to 6/1
Wheelbase	98½ in
Front Tread	49¼ in (later 53)
Rear Tread	49¼ in
Weight dry	1830 lbs
Frame	Tubular ladder, bore-section side rails
Front suspension	Porsche-type trailing arms, transverse leaf
Rear suspension	Swing axle or de Dion, transverse leaf
Shocks	Friction and tubular hydraulic
Frontal area	10 sq ft

MASERATI—4CLT/48	
Type	4 cyl, in line
Valve Arrangement	Inclined 45 degrees
Bore & Stroke	3.07 x 3.07 in (78 x 78mm)
Stroke/Bore ratio	1/1
Displacement	91.1 cu in (1498 cc)
Compression Ratio	6.5/1
Ignition	one Marelli magneto
Carburetion	twin-throat Weber SD
Boost Pressure	2.6 atmospheres
Max. Power	260 bhp @ 7500 rpm
Bhp per cubic inch	2.85
Piston speed @ max. bhp	3850 fpm
Drive Train	4 speeds, Rear ends from 3.41 to 5/1
Wheelbase	98½ in
Front Tread	47½ in
Rear Tread	49½ in
Weight dry	1670 lbs
Frame	Tubular ladder, 4" dia side tubes
Front suspension	Parallel wishbones, inboard coils
Rear suspension	Live axle, trailing quarter elliptics and torque tube
Shocks	Houdaille rotary
Frontal area	11 sq ft



The San Remo *featured short, stiff, and therefore very light coil springs mounted inboard of the forged control arms.*



Eight exhaust pipes for the 16-valve supercharged four, under them is the latest type steering's single drag link.

Earlier, ex-Parnell 4CLT/48 is fitted with non-standard British drums, original steering arms for double drag link

SPORTS CARS ILLUSTRATED has been accused—and rightly so—of being the sternest and most unforgiving critic of automotive brakes. Our brake test is designed to punish the brakes of our test cars and show them in their most unflattering light. And we have been almost the only voice that has continually called attention to the urgent need for improvement in this area, especially in the home-grown product. It is doubly appropriate, then, that we be the first to acknowledge the step that has been taken by Buick—and that we present them with the SCI Achievement Award for being pioneers in the production of safer, more efficient brakes for an American production automobile.

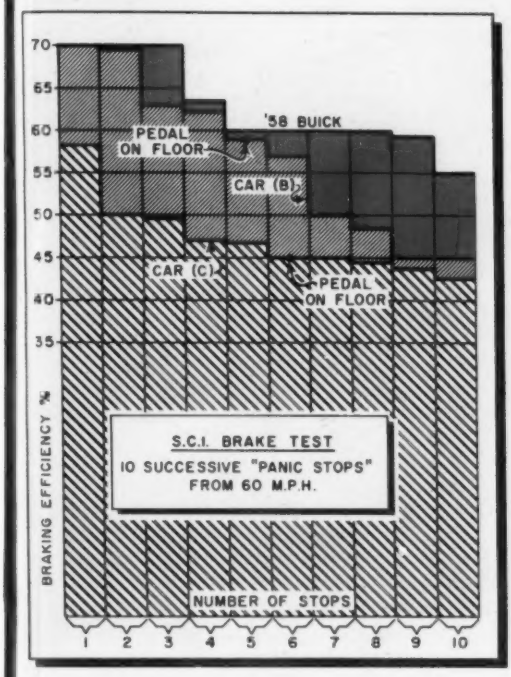
After testing a 1958 Century, one of four Buick series (all but the Special) equipped with new, deeply-finned aluminum front brake drums, it is our agreeable duty to report that these are the best brakes on a Detroit sedan by far that we have tested, and that they are, conservatively, a 100 per cent improvement over conventional Detroit brakes.

In all SCI road tests, the brakes are tested in a series of ten consecutive, simulated-emergency stops from 60 mph. The rate of deceleration is measured by a gravity decelerometer, the results being presented in terms of "braking efficiency", a bit of misnomer that has become traditional. One hundred per cent is equal to one "g" or 32.2 ft/sec², which is a high-falutin' way of saying that your speed drops 22 mph during each second of such fierce deceleration. Like most such standards, it is rarely, if ever, attained and 70% can be considered a superior figure indeed.

More important than a drop in braking efficiency during the brake test is loss of pedal. We find it the rule for Detroit sedans to brake quite efficiently for the first few stops, but then they deteriorate rapidly. It is not unusual for the driver to find he has the brake pedal pressed firmly against the floor during the last stops, indicated in the brake efficiency reading of only 40 or 50, no matter how hard the pedal is being pressed. At best, until they have cooled, which may be as many as 20 minutes later, the brakes are a pathetic shade of their former selves, and in fact, once faded, they will never again be as fade-resistant as they were originally, little as that was. Frequently during these punishing tests they develop squeaks and pull to one side or the other rather alarmingly.

The 1958 Buick Century's brake efficiency story is told in the accompanying chart. While two other Detroit cars tested recently by SCI ran out of brake pedal on the fifth and sixth stops, the Buick still had half its normal pedal travel after 22 crash stops from 60 mph. An eleventh stop attempted in one car was futile, braking capability was nil. While the Buick's efficiency had dropped considerably by the eleventh stop, it remained quite consistent for another eleven, with quick, small recoveries as the drums cooled slightly as the car was being turned around. This was by far the most severe test we ever have submitted a sedan's brakes to, but after it was over the Buick's brakes functioned perfectly. More pedal pressure was required because the linings had been fried, but there was no squeaking, chattering, grabbing, nor the slightest tendency for the brakes to pull to the side.

Our test Buick made twenty-two crash stops from 60 mph, and still had pedal. Superior heat dissipation characteristics of the bi-metallic drum start to become evident after only two stops, when the cars with cast-iron drums suffer fade due to heat build-up. After six stops, cast iron drums don't do the job.



The phenomenon involved in deceleration translates Kinetic Energy (mass times velocity squared) into Heat by means of friction between the brake lining and the drum. The rate at which this heat can be dissipated determines, in the long run, the rate at which the vehicle can continually decelerate.

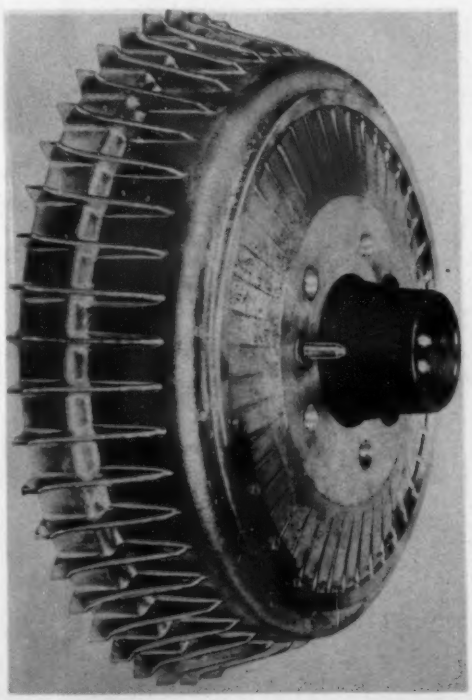
Any braking system will stop a car *hard* once or twice, but in doing so the brake shoes and drums heat up to such a high temperature that the coefficient of friction will be seriously reduced. This is called brake fade. Continued effective braking depends on dissipation of the heat being generated in each stop. Normally, this drum-to-air heat transfer is too slow to permit further panic stops in a car whose brake system cannot absorb the additional heat that is being developed.

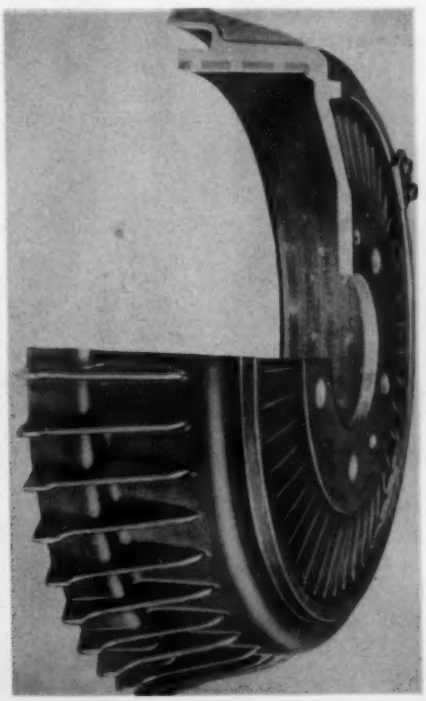
Buick's new alloy drum conducts heat through the drum faster. Heat conductivity of aluminum is three times that of the normally used cast iron, so heat flows through it three times faster to the radial cooling fins, themselves a fairly new concept in Detroit. These fins swirl air into contact with the extra large surface of the hot drum. Aluminum also dissipates heat into air more rapidly than iron, so here again an advantage is gained. Thus, because more heat can be carried off, more heat can be safely developed, and the system can continue to operate at high loads and yet keep the temperature of the brake lining below the sizzle point.

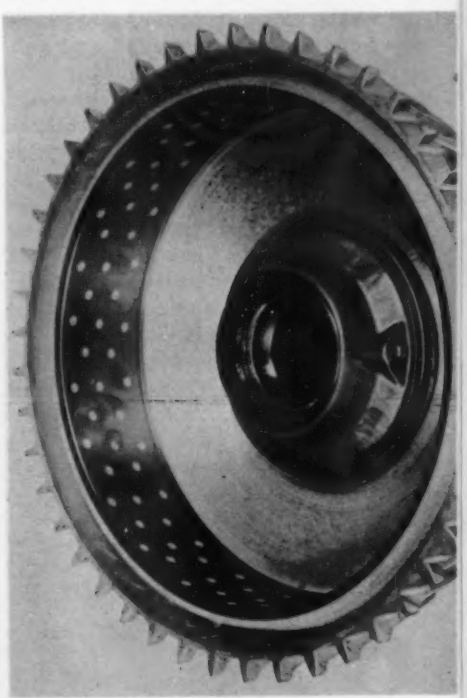
Bonded aluminum-steel brake drums are not exactly new, having been used on racing cars both here and abroad and on some of the sports cars as well. However, this is the first time that any U.S. manufacturer has applied them to a strictly production, drive-it-to-the-market passenger car as a matter of course on a mass production basis. Kudos are due as well to Jaguar for being the first in the world with four wheel disc brakes on a sedan, but frankly, we expect this sort of improvement from a sports car manufacturer of their integrity. Buick is now setting the pace in the brake improvement department for other American manufacturers—which is why SCI is presenting Buick with an award.

These are very good brakes on the Buick; they are as significant today as Oldsmobile's V-8 engine was in 1949. They definitely point the direction which the American industry will go; though not necessarily the route to be followed, as disc brakes cannot be ruled out. Whether disc or bonded drum, American brakes will surely be *better*.

Exterior of bi-metallic drum is aluminum alloy with fins moulded along the periphery. These fins stimulate turbulence in the cooling air and put more drum area in contact with this air. Cutaway shows aluminum alloy (with heat conductivity three times that of cast iron) moulded around ferrous friction surface, similar to the process used on the stoppers of the 1957 Sebring Corvette. Viewed from the inside, the alloy is moulded around and into holes drilled in the cast iron.







SCI ROAD TEST:
Berkeley Sports

If the front-wheel Berkeley is "pulled" around the corners, it behaves like it's part of the road. Because of its low power (top speed about 60 mph), it is extremely difficult to develop—and hold—large slip angles ,or to get into trouble.

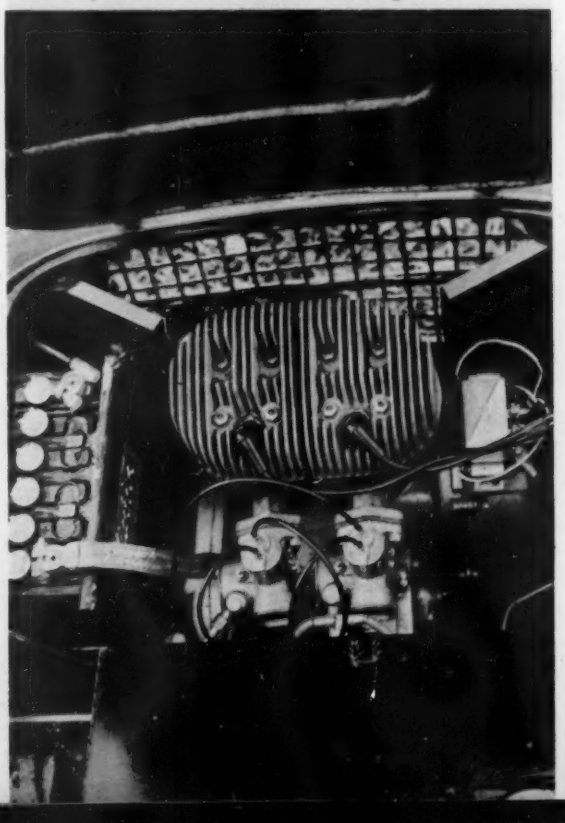
THE Berkeley Sports is a small but very sociable car. From the moment we pulled out of the Berkeley garage we began to make new friends. And the car is definitely an attention getter.

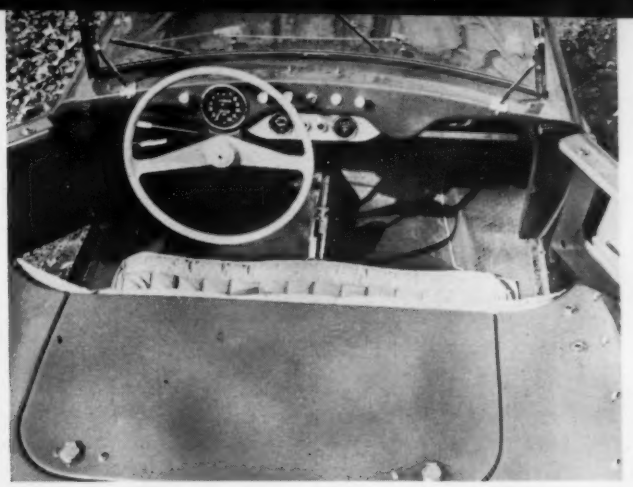
Driving out into New York's garment-district traffic, we braked to a halt behind a huge tractor-trailer. Immediately another pulled up behind, and a third came out of a driveway, stopping with his bumper nuzzling the right door: sort of like being dropped in the middle of a herd of Brontosaurii. The driver of the truck behind stepped out and said "Small, ain't it? I bet I can pick that thing up." And he did! But he was quite surprised when we slipped the car into gear and eased it ahead, forcing him to run along with his hands full of car, like a reluctant barrow-pusher.

The Berkeley at this point had only twenty-seven miles on the odometer. In all conscience it was impossible to conduct a road test until at least two thousand miles were on the clock, so the car was run for four days before it was put under the stop watch and subjected to the scrutiny of the SCI staff. Fortunately, these four days represented a variety of conditions: a summer-like day; a rainy day; a day that was cold; and the last day, in which we conducted the performance testing, was cold, sun-less and dry.

The first thing we did was lift the hood, wherein dwells the Excelsior "Talisman Twin" vertical two-stroke engine with a *full* 328 cc pumping a *full* 18 horses. The two KLG sparkplugs are connected to two coils, with a set of points for each plug. There is no sump since the engine is lubricated by the petroil system, which mixes one part lube oil to sixteen parts gasoline (one quart to four gallons). In appearance the engine looks as though it was originally de-

Two-stroke two-cylinder 328 cc engine has 1 plug, 1 coil and 1 carb per cylinder. Fuel tank, foreground. At right is Siba Dynastart, combination starter-generator.





Instruments include speedometer calibrated to 120 mph, fuel gauge, ammeter. Reinforcing struts at edges of windshield are very practical. Gate-type gear shift splits cockpit. Jump seat/storage compartment deck pivots upward from seatback.

Storage shelf under dash is very large, and there is no tunnel. Progressive gear shift pattern moves aft through two neutrals.

Jump seat will hold small child, but an adult will not fit in. Removing back of jump seat reveals huge storage compartment, holds roof. If edges are trimmed, spare will fit in, too.

signed for a motorcycle—perhaps because it was.

On a cold day the engine is not an immediate starter. The owner's manual prescribes that the choke should be fully closed, the throttle about half open (or half closed) and the engine cranked. It worked, but it took a few turns. It's a consolation to look at the full-size battery, then the size of the engine with its built-up roller-bearing crank, and realize the number of turns one has before exhausting the charge. The starter is small; it will not move the car on the battery. On the other hand, once the engine is up to temperature, the starting is literally push-button. The slightest touch fires the engine up with absolutely no starter noise. It saves a lot of embarrassment for the driver who is prone toward stalling, as one might be until he learns he has to scream the engine out before easing the clutch. The starting motor is the Siba Dynastart, which combines the functions of cranking the engine and charging the battery in a single unit. It's a handy way to save space and weight.

Once running, the engine is uneven, as may be expected from a two-stroke unit with the engine exhausting towards the ground under the belly pan. A great deal of the exhaust noise reverberates into the cockpit. Once on the road, however, the story changes. First gear gives you a definite feel of acceleration, for the engine winds up quickly. Top is about 20 in first; then to second, where the Berkeley is less snappy up to about 35. This is the point to shift the compromise between engine noise and acceleration. From here the car pulls all the way up to 60. The most comfortable cruising speed is between 50 and 55. The engine produces enough power at this rpm to level out road rises and there is very little vibration. If you get caught with your revs down on

We forced the Berkeley sideways by cutting wheel, hitting brakes; no matter how rough we were, wheel correction and power brought tail in line. We were never in serious trouble.

most any hill, you have to be a man of patience. You can only get so much power from less than a third of a liter, but our test car, not yet fully broken in and at no time driven as if we were on an economy run, gave us an honest *57 miles per gallon of fuel.* The engine just can't burn enough fuel to get the half-ton of car and passengers up the hills in a hurry.

The clutch operates smoothly and easily and the gears can be changed without using the entire clutch throw. It is, however, what used to be called a "suicide" clutch—all of a sudden you've got it. Once you know it's there, though, you soon get used to it and get to like it. It's a multiple disc unit that really bites.

A progressive-pattern remote-linkage crash-transmission ties the engine to the driving front axle. There is really no shift pattern; to engage first gear from neutral merely pull the shift lever one notch toward you, until you hit a stop. To engage second, move the lever off the stop and pull until you hit another stop. Third gear is engaged by moving off the second stop and pulling down to the bottom of the gate. That's all there is—there are only three forward speeds. Fourth was converted to reverse, and is engaged by working up through the pattern as far forward as you can go. Incidentally, there are *three* neutrals—one between each cog. It's a very convenient fool-proof shift that is a cinch to manipulate once you get used to it.

To say adequate for the brakes would be to sell them short. A car that weighs 760 pounds dry needs far less than the Berkeley's allotted 65 square inches of lining to be described as adequately braked. This is 171 inches of lining per ton dry. Wet, with passengers, the ratio is closer to 125 square inches per ton; the stopping power is excellent. At low speed, up to maybe 40 mph, the slightest touch on the pedal with the tow of the shoe brings the car to a fast, gentle stop. At high speed (50 to 60 mph) only slightly more pressure is needed. This is to be expected when one considers two factors: the brakes are oversize, probably designed for a larger car; the heat energy dissipation factor of the linings is greater than the kinetic energy developing capacity of the engine (remember that 57 mpg). On our very punishing brake test there was no sign of fade. The light-weight rear however, does present a problem: it doesn't take too much push on the pedal to lock up the rear wheels, and if you push too hard with the front wheels cocked, you'll find yourself sideways.

The brakes are good but stopping can be tricky. To see just how tricky, we took the car on a winding Connecticut road and tried to bend it. We sneaked up on a curve at 55 mph, cut the wheel sharply to the right, and slammed on the brakes. Immediately the tail swung way out to the left, and a lot more steering correction was needed than one normally expects. There just isn't enough weight on the rear to keep it stable, and the front wheels do most of the stopping. The rear lifts and tries to catch up with the front end. The car slides, however, and we do not believe that a driver of fair ability could get the car to go fast enough to get himself into any trouble that he couldn't get out of. We whipped it for all it had, contorted it, and never felt as if we were really going to lose it.

There's only one way to describe the steering—quick. With 2¼ turns lock to lock, it doesn't take much wheel motion to get around bends and curves. Steering is extremely fast, and there doesn't appear to be very much wheel return. You have to turn it in and then turn it out of the curves—usually requiring no more than a half-turn. Yet on extremely rough and choppy roads very little shock is transmitted back to the driver through the wheel. One thing, however, can be felt.

The power is transmitted through a pair of Hardy-Spicer joints that do not transmit constant-velocity. On straights it's not noticeable; but you can feel it on the turns. It's particularly bad—you can feel the power surges—when starting from a dead stop in full lock, as in the case of making a U-turn. The wear factor is likely to be quite high.

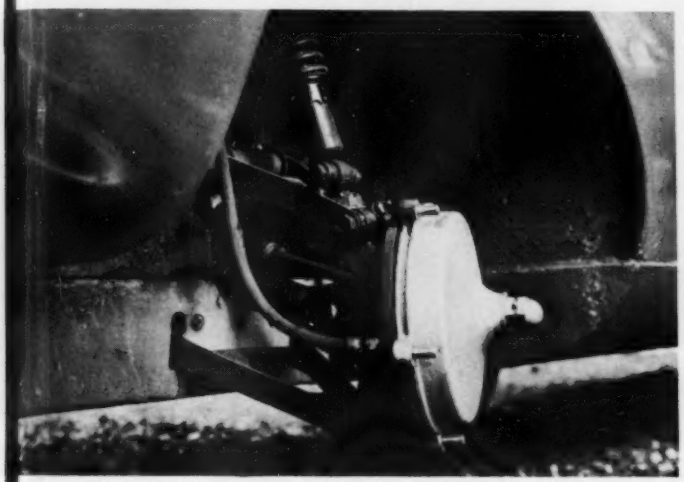
But once in motion it's easy to forgive these minor faults. The car tracks well on the straight and requires little attention. There is very little urge to wander, but turning may feel a bit strange to the driver accustomed to rear-wheel drive. The front drive, coupled with the lightweight rear, requires getting used to.

(Continued on page 47)

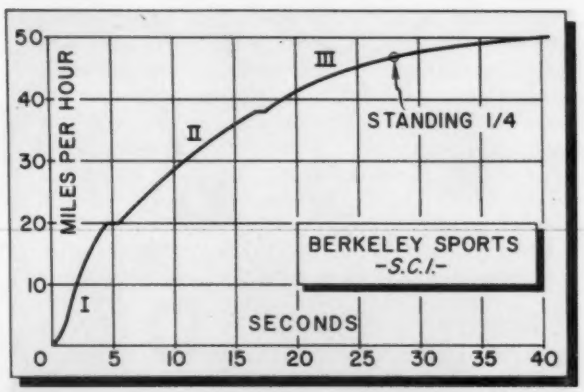
One of the sit-down-first-then-put-the-legs-in variety. Berkeley has a good finish, plenty of glass area, and independent rear suspension.

The Associate Editor parked by pulling abreast of a space, bouncing in front, and walking in the rear.

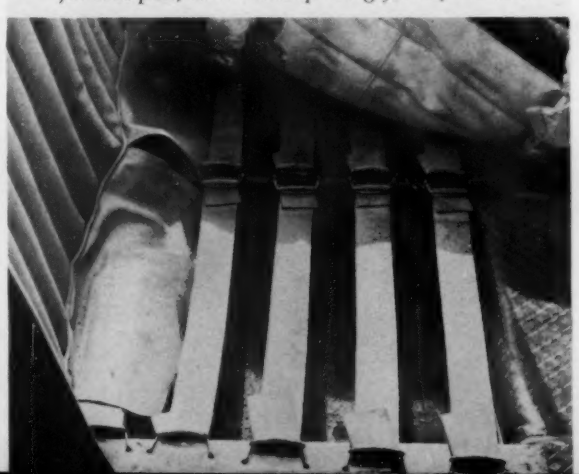
Seven inch brake drum is more than adequate for 760 pound car. Chrome hub is slitted for cooling air, and is held on by knock-off hub.



Wishbone front end with Girling coil spring and shock unit. Torque is transmitted through Hardy-Spicer joint.



Tension-adjustable rubber spanners are base for seat pad, which is surprisingly comfortable.



BERKELEY SPORTS

TEST CONDITIONS:

Number aboard	2
Top position	up
Temperature	50°
Etc.	full fuel tank, weather clear

PERFORMANCE

TOP SPEED:

Two-way average	59 mph
Fastest one-way run	60.5 mph

ACCELERATION:

From zero to	
20 mph	4.6 sec
30 mph	11.0 sec
40 mph	18.9 sec
50 mph	39.1 sec
Standing ¼ mile	27.9 sec
Speed at end of quarter	46.4 mph

SPEED RANGES IN GEARS:

I	0-18 mph
II	15-40 mph
III	25-top

SPEEDOMETER CORRECTION:

Indicated	Actual
20	19 mph
30	28 mph
40	38 mph
50	47 mph
60	55 mph

FUEL CONSUMPTION:

Average driving (45-60 mph)	57 mpg

BRAKING EFFICIENCY (10 successive emergency stops from 40 mph, just short of locking wheels):

1st stop	50
2nd	50
3rd	58
4th	62
5th	65
6th	65
7th	65
8th	65
9th	65
10th stop	65

Note: Pedal High, No Fade.

SPECIFICATIONS

POWER UNIT:

Type	Vertical Twin, two-stroke
Valve Arrangement	None (cylinder wall ports)
Bore & Stroke	2.28 x 2.44 in (58 x 62 mm)
Stroke/Bore Ratio	1.07/1
Displacement	20 cu in (328 cc)
Compression Ratio	7.9:1
Carburetion by	Twin Amals
Max. power	18 hp @ 5000 rpm

DRIVE TRAIN:

Transmission ratios:	
I	13.85
II	8.34
III	5.27
Final drive by open chain	
Axle torque taken by	wishbone

CHASSIS:

Wheelbase	70 in
Front Tread	42.25 in
Rear Tread	42 in
Suspension, front	Independent, wishbone, coil spring
Suspension, rear	Independet, swing axle, coil spring
Shock absorbers	Girling
Steering type	Burman worm and nut
Steering wheel turns L to L	2.25
Turning diameter	28 ft.
Brake type	Girling Hydraulic
Brake lining area	65 sq. in.
Tire size	5.20 x 12

GENERAL:

Length	130 in
Height	42 in
Weight, test car	760 pounds
Weight distribution, F/R	34/66
Weight distribution, F/R, with driver	41/59
Fuel capacity	3.6 U. S. gal.

RATING FACTORS:

Bhp per cu. in.	0.90
Bhp per sq. in. piston area	2.20
Pounds per bhp—test car	42.2 dry; 55.5 with passengers
Piston speed @ max bhp	2040 fpm
Brake lining area per ton	171 sq. in. dry; 130 sq. in. with passengers

INTERNATIONAL RACING: FORECAST FOR '58

by Jesse Alexander

THE MOROCCAN Grand Prix at Casablanca brought the curtain down on the 1957 racing season with a proper bang with the victory of plucky Jean Behra driving a 250F Maserati. A Vanwall was second, a BRM was third; but in the early stages of the race a new 2.4 (146 cubic inch) V-6 Ferrari Formula I car demonstrated fantastic potential. It was running on high octane pump gasoline, as is decreed by the CSI for '58, and until Peter Collins overdid things in a turn and spun out, it led the race.

So here's the point: nobody really came out on top of the heap in 1957 European Formula racing. Vanwall has had its share of success in '57—and rightly so—but the car may be too heavy and its engine may be unsuited to the new fuel requirement. Maserati's design is archaic in the extreme, yet it keeps on winning. BRM have finally gotten their machine to the point where it will handle and its engine is without a doubt the most potent of the three, but Ferrari's performance at Casablanca showed a combination of engine and chassis that may well pin the ears back of anything that wants to tangle with it in '58.

For Vanwall, '57 has been a year of achievement after two of disappointment. The first time out, at Monaco, Tony Brooks finished second behind Fangio in a drive that not only opened a pair of Argentine eyes to the fact that Brooks can drive, but also demonstrated that the Vanwall is a car not to be taken lightly. Stirling Moss, number one Vanwall driver and second only to Fangio in sheer skill and ability, became ill shortly after Monaco. Tony Brooks, #2 man on the Vanwall equipe, and a driver who has elevated himself to a par with Moss in 1957, was injured in a sports car accident at Le Mans. Thus, it wasn't until the GP of Europe at Aintree that the proper Vanwall combination could get together and set the Fleet Street journalists raving. The Vanwall's next win was at Pescara, where Moss ran away and hid from anything and everything. All the effort in the world on Fangio's part put him no closer to the English car. When it happened again at Monza, on the occasion of the Italian Grand Prix, the old man began to wonder about 1958.

Then came Casablanca, and a new track. Moss was on hand again, but *again* he suddenly became ill and was unable to start. In practice Tony Brooks proved to be the quickest, finally averaging 117 miles per hour in Stirling's car for his best lap. Lewis-Evans, Vanwall "third man" was second fastest, thus the two green cars were in the front row of the starting grid bracketing Jean Behra's Maserati. When the flag fell, Behra made a brilliant start, forcing both Vanwalls to eat Maser dust; Behra fully expected Brooks to roar by in short order, but as the leaders surged up the long hill to turn two, it wasn't a Vanwall that flew past, but Peter Collins in the new Ferrari.

Peter stayed out in front for seven laps, easily outdistancing the Maserati and Brooks' Vanwall. Then, after spinning off the road twice, he did it properly for the third time and was unable to rejoin the fracas. Collins set out for the pits on foot, but he was pleased that he had given the opposition a taste of what was in store for them in 1958. Then Brooks retired with magneto failure. This left Lewis-Evans to uphold the Vanwall honor. He knew he had no chance of catching Behra, so he held tenaciously to second place, limiting his rpm to 6800 rather than the normal 7200. This decision paid off handsomely, for as the Vanwall toured around on its final lap the fuel gauge was indicating zero and the engine began to cut out. Lewis-Evans just barely managed to finish without running out of fuel in the 260 mile Grand Prix (championship events run 300).

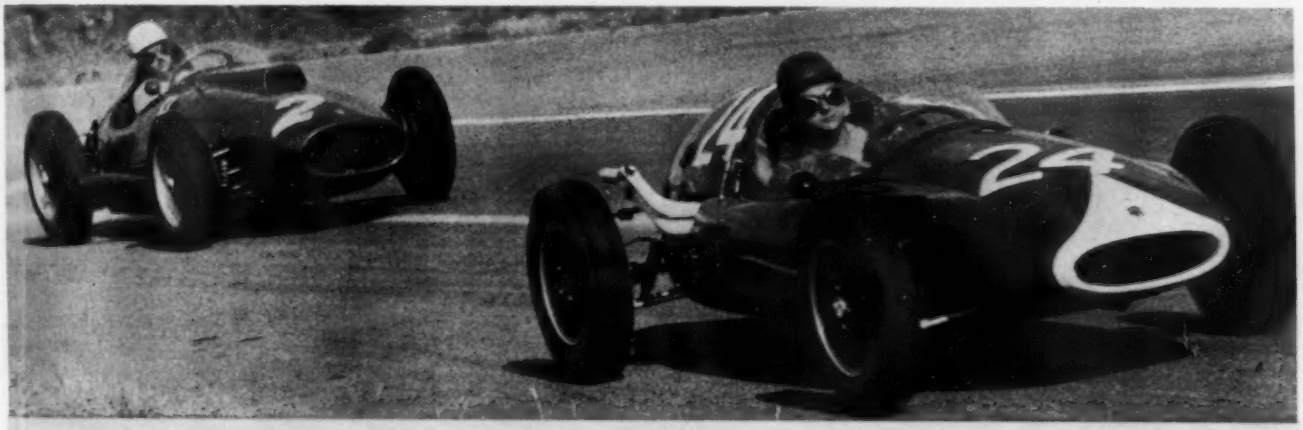
Obviously the Vanwall is not easy on fuel; with all tanks full, it carries 56 gallons, a weight of over 300 pounds. Running on pump fuel in 1958 will probably mean less quantity but can Vandervell get the same performance? An engine is at Norton's right now under test. The new Ferrari gets the job done on 45 gallons; thus the new CSI requirement is going to make Formula racing most interesting in '58.

(Continued on page 57)

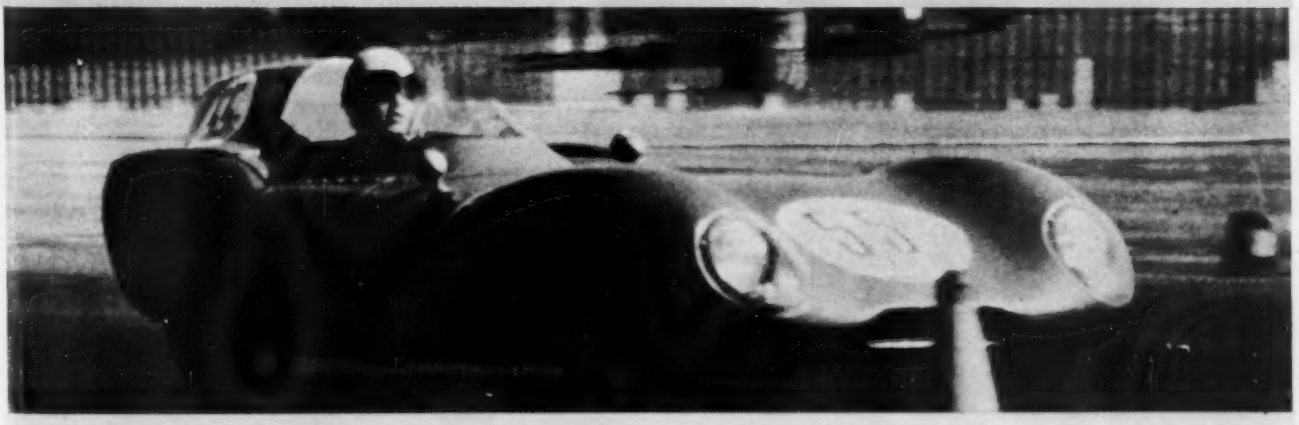
The Maserati V-12 (above) and the BRM (left) have been more conspicuous for their promise than for their performance during the past season. Harry Shell and Ron Flockhart, respectively, at the wheels; scene, Casablanca.

With a three liter limit for 1958 sports car racing, the time seems ripe for Daimler-Benz to resurrect the 300SLR. They may do it, too.

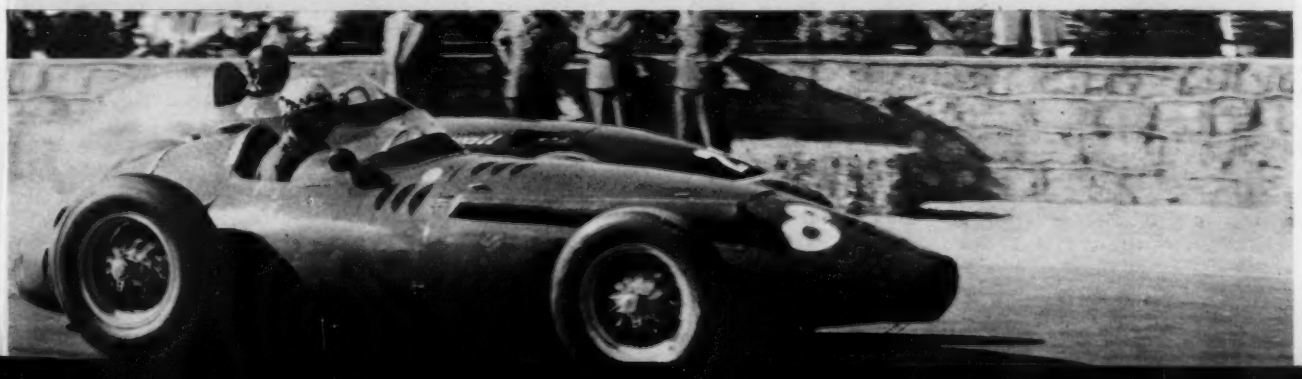
Ferrari's V-6 (left) and the Cooper got F-2 started, but both have been bored out to run F-1, with startling success.



Supreme in the 1100 Sports category, Lotus can well be the dark horse to watch in 1500 Sports and F-2 in 1958.



The two outstanding G.P. cars of '57 finished the season with the Maserati six just an elongated nose ahead of the Vanwall.

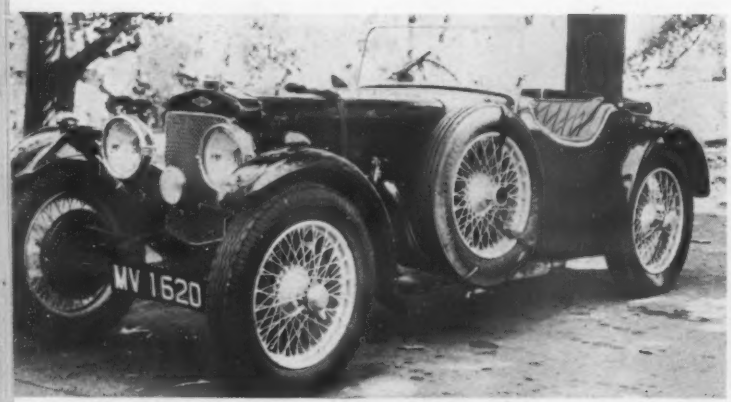


SPORTS CARS ILLUSTRATED

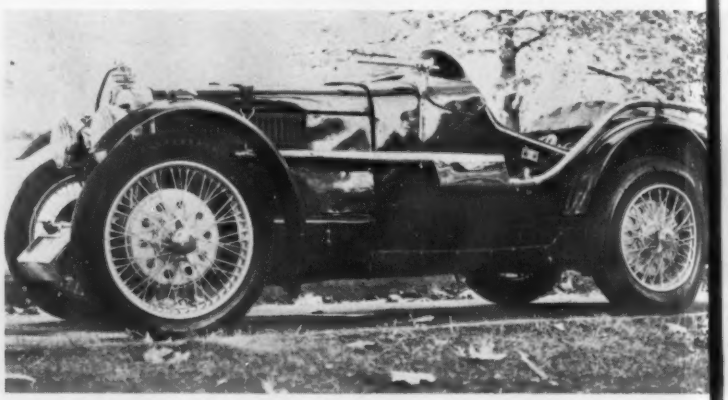
THE VINTAGE CAR STORE

by Ken Purdy

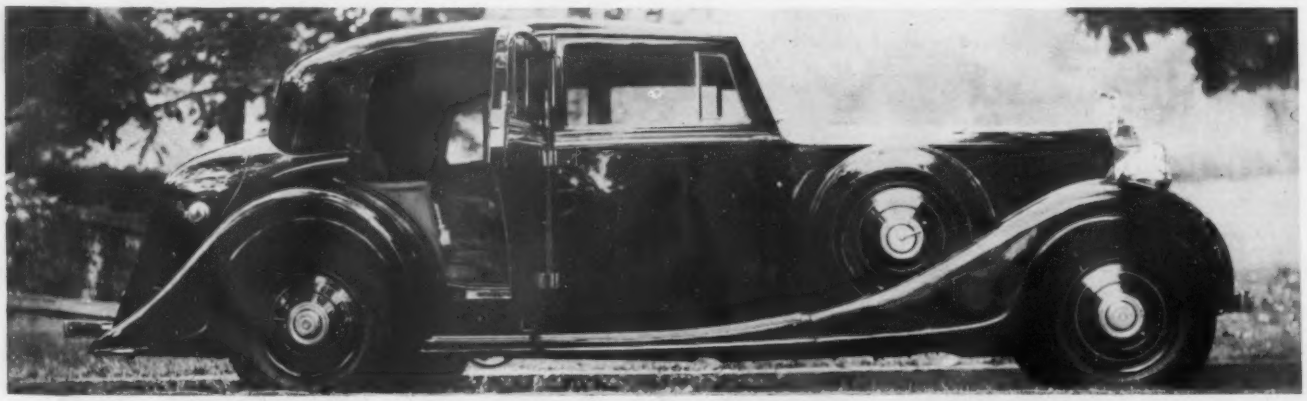
There's no need now to buy blind when shopping for a classic



Frazer-Nash TT Rep has locked rear-end because of chain-drive.



Truly vintage MG, built when sports cars had no doors at all.



"Sir's limousine awaits without, milord." For types more staid and settled, Potter offers this 1937 PIII Rolls-Royce.

ANOTHER stronghold of free enterprise has been breached—and a good thing, too. For the first time in U.S. history, a man is opening a store to sell nothing but vintage automobiles.

Since the first old-car enthusiast felt the blood rush to his head as he spotted an 1899 Mors rotting in a mews in Cheapside—this was in October, 1905, I think, and if I'm wrong, you prove it—the finding of desirable antique machinery has been on a strictly catch-as-catch-can basis. For many decades of course, when the world was caught up in the onrush of early automobilism, when every carriage-maker who could raise $500 and hire a "mechanic" who could tell the steering wheel from the other four declared himself a motorcar manufacturer, when the number of different marques ranged toward 3,000, old cars were a drug on the market. Few people cared for anything but new ones. There were those few, however, and the foundations of some of the major British and Continental collections were laid down early.

Passion for car-collecting grew slowly, with little hint, even in the 1920's and 1930's, of the fervor it would finally know. As late as 1934, a Mercer Raceabout in good condition was sold for $75—and it was a tough sale, at that. But after World War II, the dam caved in with a rending crash, and the collectors began to collect in dead earnest. As more and more cars were bought up, and as the peasants holding most of them grew craftier and more grasping, the chase naturally got harder. Publicity made things rough, too. Newspaper and magazine feature-writers were quick to jump on the subject, and quick to cite out-of-the-world prices. Collectors who had other interests, Jimmy Melton for example, spread the word so far and so wide that by 1946 there wasn't an oat-farmer buried in the backwash of Arkansas—that used to be a state, son—who didn't value the red and rotting chassis of the T-Ford hub-deep in the wood-lot at around $1500, cash money.

Before you could think about buying

the stuff, though, there was the problem of finding it. Time was when a week-end in the shun-pike country would almost always turn up a car or two. You just drove around and poked your head in old garages and talked to the folks. Sooner or later somebody would remember that Jed Steegor had some kind of old car stashed away in his barn. You got a small boy to show you the way and set off, helplessly aware that long before your arrival, the bush-telegraph would have brought the word to Jed that a prime sucker was on the way, eager and loaded with folding.

Pickings were soon too thin for that method, though. The really wise men began to think up dodges like post-card circulars: They sent post-cards to every postmaster, say, in the state of Pennsylvania, offering a small reward for leads on old cars. They advertised in obscure country weeklies. They staked out country drummers, men with years of experience in selling rural store-keepers, and plied them with truth serum. They tried everything but kidnapping, and I'm not really sure that somebody didn't have a go at that.

Result of all this is that if you want, say, a nice vintage sports car today, you can reconcile yourself to the fact that you're going to have a tough time finding it by yourself. Your chances of finding one in the hands of the original owner, or even the second or third owner, are almost *nil*. You advertise, you watch the for-sale columns in the U.S. magazines, for a starter. Let's say you have your little heart set on a blower Bentley. After months of watching the ads in the commercial magazines, in the Sunday edition of The New York TIMES, in the colums of the club magazines, you turn one up: "Blower Bentley, 4½ liter, thought to be 1929 team car, 36,000 miles, absolutely mint condition, $6500." The car is in Dallas, let us say, and you, of course, are in Dayton. What to do? Well, a pearl like this will not be long on the market, you know that. Better not chance a letter. You leap to the long-distance tube and spend six dollars to

Perhaps the grandest **touring** *car ever built, this Rolls-Royce Silver Ghost is powered by the 40/50 dual ignition six.*

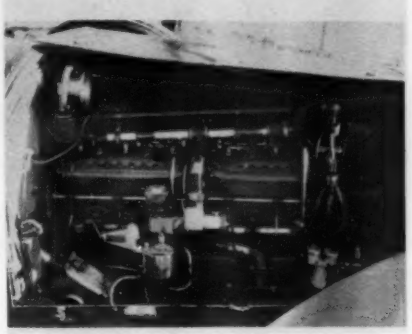


Photo: Bob Coogan

discover that the car is in storage in a garage, hasn't run for years, and is in the hands of people who obviously can just barely tell the difference between a Bentley and a Mack truck. You plead with them to hold the car for you for 48 hours. You have a pal in Houston, so you phone him—another six bucks—and ask him to run over to Dallas to get the Bentley for you. He is not notably enthusiastic, a circumstance that baffles you. After all, it isn't as if you were asking him to make a cross-country run. Dallas is just down the road from Houston, isn't it, 30 miles or so? Sure it is.

Two days later you hear from your buddy. The Bentley is on blocks, a good thing because generations of rats as big as beavers have shredded the tires. At one time, apparently, it had a fabric body, which may have been green in color, little hard to tell. There isn't an instrument, a light, or an unbroken pane of glass in the car. The engine looks like a '48 Merc., but may be a '49. No doubt about the steering-wheel, though. That's strictly Sears Roebuck. You send your chum a quart of scotch, and think how lucky you are. After all, you might have been stuck with the lump, and for the expenditure of a mere $20, you beat the rap.

Even more exciting is the purchase of cars abroad. It's more exciting for two reasons: One, the cars *sound* glamorous and exciting; two, you stand to take a much worse licking, and that's exciting, like playing roulette at the $100 table. You don't have to go to Paris or London, either. You can get hurt anywhere, and by mail. Consider the experience of a Bugattiste whom I know, I know him very well indeed, and he shall here be nameless. This worthy got a letter from Belgium one day, offering a Type 50 three-seat coupe for $500. The 50 is a rare beast, there are only 12 of them listed in the Bugatti Register. The aspirant seller appeared to be an honest, horny-handed sort. He described the car in minute detail. He sent many photographs. A deal was arranged and the money changed hands. When the car was off-loaded in Brooklyn, lo, it was exactly as described. There wasn't a scratch that hadn't been catalogued, not a *vin ordinaire* spot on the upholstery that hadn't been listed. A little water, a little *essence* and it went off like a rocket and ran 50 miles home, blowing off a Buick on the way. There were things wrong with it, but yes. The load was in the capable hands of Arthur James Hoe, the Duesenburg-Bugatti *doyen*, for a trifling 24 months or so, but nevertheless, it was a dandy $500 worth. Our friend will still be running it, if he should live so long, when nobody can remember whether the '57 Cadillac fins went up, down or sideways.

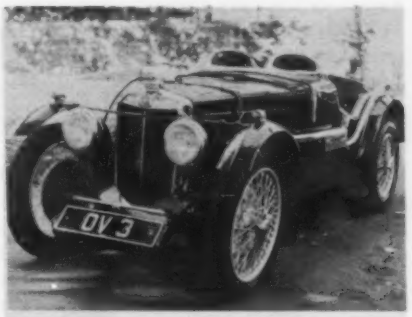
What is the moral of the story? The moral is, if old Massa Archie Moore holds up the left for you to look at, can the right cross be far behind? Hard upon the to-be-expected expressions of gratitude from U.S. to Belgium, came another letter. The burden was this: "You think that 50 is something? Mon vieux, it is a lump, a nice lump, to be sure, but still a lump a crawling thing a fugitive from a Molsheim junkyard. But there is such a thing as a *good* Bugatti. Maybe only one, but there is such a thing—and I have it. A Type 57S. Mint. Better than mint. Flawless in every particular. An instant starter, even in the Arctic. Fast? When I come up behind an XK120 on the *pavé*, I restrict myself to third gear. After all, one must be sporting. When this car went to the factory the other day, Marco *himself* waved his hands helplessly. There was nothing to do with the car, nothing. A little air in the left front tire, that is all. Otherwise, perfect. No, *beyond* perfection. Now, for $4000 . . ."

Now it happened that our American friend had a buddy who badly wanted a 57S hard-top coupe. He had vetted a couple in this country, both dogs. He looked at the pictures of the Belgian 57S, a thing of beauty with its pigskin upholstery, pipe-organ exhausts, original carriage-makers' plate, and so on. He offered

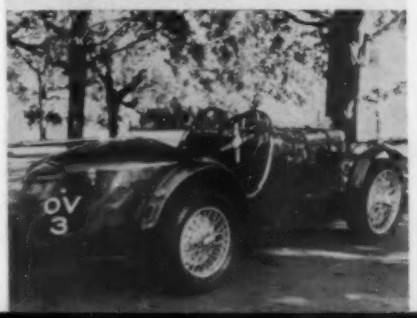
(Continued on page 64)

Outstanding sporting piece of "store", this Frazer-Nash Tourist Trophy **Replica** *features outside shift, spartan look.*

Photo: Bob Coogan



Astound your TC-owning friends by driving this 75 mph, 750 cc MG C-type, otherwise known as Montlhery Midget. Only 45 were ever made, in 1931-32.



the compleat ANGLIA

F-head power for the Eleven-Seventy-Two English Ford Flat-head

by Dennis May

WELL over twenty years old in basic design, one of the last two surviving sidevalvers in the British auto industry, and with a bore/stroke ratio (1/1.46) that went out of fashion with dumbirons, the 1172 cc Ford engine wouldn't seem, *prima facie,* irresistible material for soupcraft. Nonetheless, following in the footsteps of its broad-shouldered uncle, the late-lamented flathead L-head V8, Dagenham's small four-in-hand does respond right nimbly to the tuning fork, power increases of 100 percent and over being recorded without using a blower. Cheap and simple to modify, and a worm that doesn't turn easily under malusage, the Eleven-Seventy-Two almost completely dominates the esoteric English sport of Trials. Also, such is its popularity among builders of elementary and inexpensive sports cars that a national racing formula has grown up around it in Britain.

The "well-nigh unburstable" 100E version of this powerplant, as fitted in the Anglia and Prefect sedans, is an egg-basket favored by several makers of proprietary conversion kits. Some of them retain a flat head, in either iron or alloy, and use dual caburetors, superior manifolding, high-compression ratios and sophisticated cams—though not necessarily all four on the same menu—to get their extra wallop; others combine selections from the above list with an entirely original cylinder head containing vertical inlet valves operated by pushrods and rockers. One example of the latter setup has been successfully developed by Willment Speed Shop Ltd., and the resulting pack is now on sale in the U.S. through Genuine Foreign Parts, Scarsdale, N. Y

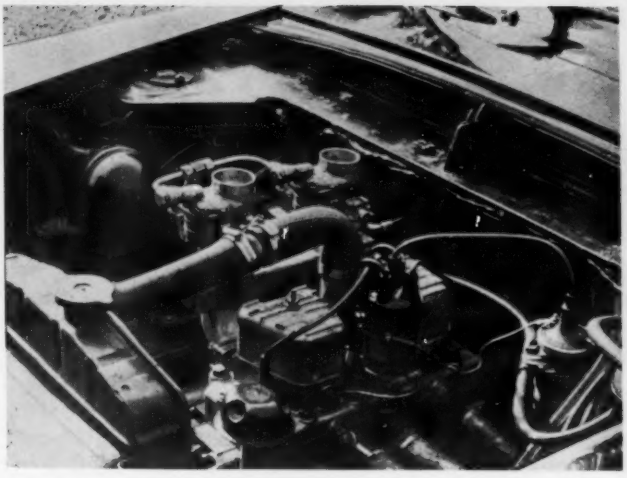
SCI recently had an opportunity to roadtest a Willment-treated Anglia on its own ground; but before dissecting the results let's pause for a look at the four different deals these people offer.

The cheapest and least-potent consists of the ohiv head, complete with pushrods, rockers, non-standard intake valves and springs, throttle linkage fittings, separate alloy inlet manifold, etc; this hamper doesn't include a curburetor, the original 26ZIC/2 Solex (23 mm choke) being switched to the Willment manifold. Output claimed is 50 bhp at 5200 rpm, compared with 36 at 4500 for the stock 100E. Torque goes up from 52 pound-feet at 2500 rpm to 64 at 2700.

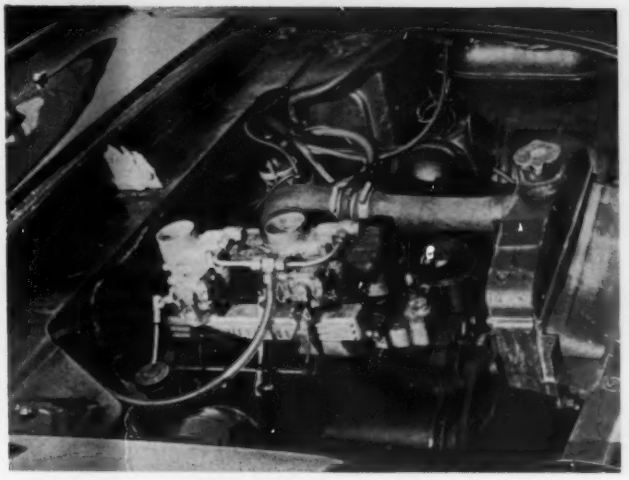
Number two ensemble is generally similar, but the intake manifold is ported for dual 26ZIC/2 Solexes; you use the carb you've already got and harness it up to one that Twickenham sends. Performance now: 54 bhp at 5600 rpm;

A Willment aid to roadability and cornering is an extra anti-roll bar for the front end. Stock models have only the single bar at the top. Car corners without any vices.

Another stability assist are these trailing radius rods that link the back axle to the side members. These rods control rear-axle dance, common to Anglias when cornering.



Willment Power Master head, with Rolls-fashion ohiv, is cast in aluminum alloy. Ribbed rocker boxes are anti-resonant and minimize mechanical noise. The four-branch-exhaust seen here is not a part of the Willment kit.



Seen from the starboard side, the conversion kit includes a special aluminum alloy inlet with balance pipe. Down-draft Solexes don't have clearance enough for air cleaners. The ignition coil has to be repositioned on the firewall.

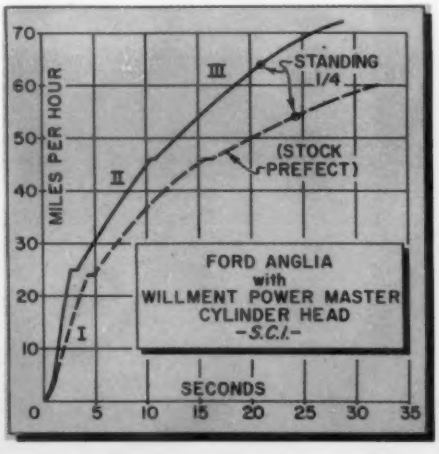
65 pound-feet of torque at 3500.

Number three repeats the main theme but uses a larger single carburetor (Solex 32PBI, 25 mm choke) in place of the two small ones; this, of course, puts the old carb out of work. Performance: 56 bhp at 5900 rpm; 66 pound-feet of torque at 3600.

The fourth and costliest dish comes with twin 32 PBI Solexes and a manifold to match. It gives you just over 63 horsepower at six thousand per minute and a torque figure of 66 lbs-ft at 3900.

But hold on—this isn't quite everything. Experimentally, by dint of a real wildfowl of a camshaft, Willment have pushed a 100E up to approximately 73 bhp, and this accessory may shortly be available on special order. More than doubling the makers' output naturally involves an appreciable loss of gentility in this long suffering engine, and such results are now only gotten with the aid of extra strong valve springs, enlarged exhaust ports, and so forth. None of the four regular stages of Willment tune entail any sculpture on the block, which has the advantage that when a converted engine reaches the evening of life you can clap the flat head back on and turn it in under Ford's exchange plan, reaping the appropriate economic benefits.

(Continued on page 60)



FORD ANGLIA with WILLMENT POWER MASTER HEAD

PERFORMANCE

TOP SPEED:

Two-way average	82.7 mph
Fastest one-way run	83.1 mph

ACCELERATION:

From zero to	
30 mph	4.8 secs.
40 mph	8.3 secs.
50 mph	12.9 secs.
60 mph	18.5 secs.
70 mph	26.0 secs.
Standing ¼ mile	21.0 secs.
Speed at end of quarter	64 mph

SPEED RANGES IN GEARS:

I	0 to 25 mph.
II	5 to 46 mph.
III	12 to top

SPEEDOMETER CORRECTION:

Indicated	Actual
30	27
40	37
50	46
60	56
70	66
80	75

FUEL CONSUMPTION:

Hard driving	24.5 mpg
Average driving (under 60 mph)	29 to 32 mpg

POWER UNIT:

Type	In-line 4.
Valve Arrangement	F-head (Overhead intake, side exhaust)
Bore & Stroke (Engl. & Met.)	2.50 x 3.64 in (63.5 x 92.5 mm)
Stroke/Bore Ratio	1.46/1
Displacement (Eng. & Met.)	71.5 cu in (1172 cc)
Compression Ratio	8.5/1
Carburetion by	Two downdraft Solex 32 PBI.
Max. Power	63 bhp @ 6000 rpm
Max. Torque	66 lb-ft @ 3900 rpm

DRIVE TRAIN:

Transmission ratios I	3.89
II	2.01
III	1.00
Final drive ratio	4.429/1
Axle torque taken by	Willment Radius Arms
Weight, test car	(Dry and unladen) 1618 pounds
Fuel capacity	8.4 U. S. gallons

RATING FACTORS:

Bhp per cu. in	0.88
Bhp per sq. in. piston area	3.20
Torque (lb-ft) per cu. in.	0.92
Pounds per bhp—test car	(Dry and unladen) 25.6
Piston speed @ 60 mph	2440 fpm
Piston speed @ max bhp	3640 fpm

THE WRECKING YARD BIT

By RUSS KELLY & LEN GRIFFING

IN this hectic world of today, where nothing seems permanent or predictable, how can you be sure you've really "arrived"? It's easy—you're "there" when interest is evidenced in what happens to your bones.

American enterprise being what it is, an auto wrecker on the West Coast and another on the East Coast now have more than a passing interest in the physical remains of foreign cars. They are supplementing their domestic-bred stock with worn-but-undamaged parts conceived in Coventry, Stuttgart and even, if you're real lucky, in Modena. The remains of hundreds of cars sitting in boneyards, ranging from a 1935 Alvis to a domestic Continental, still attract the parts-hungry home-mechanic who can't go the gaff on a new assembly or just plain owns an "oddball". Need parts for your Thames? Your Rover? Has a big-finned job run over your Taunus? Chances are that Sherman Way Auto Wreckers in North Hollywood or Frank and Al's in Westbury, New York, can help you.

Jerry, at Sherman Way, cheerful and pleasant to talk to even when he's telling about the DKW that got away, claims the biggest trouble he has is keeping enough stock to meet the demand. Attemps to work out a mail order system didn't work out, because by the time customers got the list a good percentage of the parts were back on the road in new self-propelled homes. As a commentary on West Coast driving habits, the fastest moving parts are gear boxes, grilles and bumpers. It's possible to order parts by mail on the have-you-got-it basis—and if they do they'll save it for you—but a day makes a lot of difference in what they've got on hand.

But Jerry always has a large supply of parts cataloged and put away. A quick tour of the one-acre-plus lot turns up a model of almost every MG series since the war. The same thing goes for Jaguar, including one of those reasonably-rare Mark V four-door sedans. The English Ford lines are well represented by damaged-but-intact Anglias, Prefects, Consuls and Zephyrs. Proportionate numbers of Triumphs and Austin Healeys can be found in various stages of disassembly.

In the New York metropolitan area you talk to Tony, at Frank and Al's Auto Wrecking, who is also a very helpful fellow when you need a part. He seldom keeps more than ten or fifteen foreign-made cars intact at one time, however he does have a sizeable pile of components. As with Jerry on the West coast, Tony finds that certain parts move a lot faster than others—and American drivers are pretty much the same, East or West.

I asked Tony what parts are in most demand. He replied, "Taunus. We have only one left on the lot, and it's literally a skeleton. Also Fiat. We even bought one Fiat that had no body at all on it. The owner had started to make it into a special and only got as far as shortening the frame. Of course, most of the sports and foreign cars are pretty bad when *we* get them."

In answer to ordering by mail: "It is *possible* to get a part that you want badly through the mail. We watch the various 'parts-wanted' columns, and if we have the part we make the contact ourselves, if it's a real odd part. Last month we notified one fellow in Canada that we had a particular head that he'd looked for all over without success. He was a happy guy. But of course a phone call is much quicker than a letter, and our stock changes by the day. You know, every time I see a Cord drive up I know the driver will swarm over that picked-clean shell we have, and usually come up with something that everyone else missed. When two in a row miss, we'll melt it down".

Prices? Tony impressed the fact on us that none of Captain Kidd's progeny found their way to employment at his place "Average prices? Naturally they vary, but recently we sold a Taunus transmission for $25, and got $30 for the rear end assembly. We sold the engine from a Triumph—it may have been beat or it may have been like new—for $40. Wire wheels go for five dollars each, and we've got a big pile of knock-offs over in one corner. You've got to pick out your own."

Wrecking yard shopping is an art to be learned if the most is to be gotten from these fascinating boneyards. There are bargains everywhere and most operators like Jerry and Tony are only too glad to help you find them. On the other hand these are busy men—they're not going to lead you by

Most sought after parts in TD series seems to be miscellaneous bits of hardware such as doors, top bows, bumpers, etc.

Bill Sadler didn't get Jowett Jupiter chassis for Sadler Special from a wrecking yard, but here's one waiting to be bought.

This 1953 Alvis "Grey Lady" still has lots of usable parts on it that are very difficult—to say the least—to purchase new.

This Jaguar, hit from the left-front, makes purchases of front suspension parts a very risky business.

the pinkie either. You must know what you want; the operators don't magnaflux every component before they sell it to you.

Engines are a good case in point. Some engines are bargains of the highest order—others are worthless. It depends largely on the circumstances of the corpse's arrival in the yard whether the power plant in question is worth anything. A flipped car or one that has been smashed from the side or rear will have the best chance of owning a good engine for several reasons. First, of course is the direction of the damage, i.e., away from the engine. Secondly the car was running when wrecked, a point which carries the logical implication that the engine was and is in running condition. Finally, the chances are good that the vital accessories on the engine such as generator, starter and ignition were left undamaged. These last, incidentally, are items that a purchaser should insist be part of the deal when buying; they cost like the dickens if you have to buy them separately from a franchised dealer without the old item for a trade-in.

Rear-end gears and assemblies should only be purchased when the major source of car damage has been from the side, quartering from the front, or a roll-over. The reason for this, of course, is that blows along the axis of the driveline tend to mess up bearings, bushings and gears. Further, a hard enough blow from the front, through the long axis of the engine, can actually bend the rear axles and their housings. The same warning applies to transmissions for the same reasons. A blow at the side of the transmission can in rare instances damage it, but it would have to be a brutal blow indeed since the strong side members and the X-members will absorb a pretty fair amount of punishment before passing it through to the gearbox case.

So far we've not mentioned fire damage. Material which has suffered from fire presents an entirely different problem in that the *type* of fire makes the difference whether the engine, gears and running equipment are useable, or just worthless scrap. A fire that occurs in the body of the car or under the hood destroys only those items that are subject to flame damage, items such as generator, carburetors, wiring and interior trim. These can be listed as write-offs in any fire, but the heavy parts—block, gears, suspension, brakes etc. —will be completely useable. On the other hand, if the car has been damaged by fire that occurred outside the vehicle (such as a garage holocaust, brush or forest fire) avoid it as you would the plague. The reason for this is that such a fire acts like an annealing furnace, softening all metal parts and in some cases even melting pistons in their cylinders and bearings in their journals. A car damaged in this way is valuable only as scrap and no reputable wrecking yard operator will handle it if he knows the history—we mention it primarily as a warning to avoid buying such a "bargain" from a private party or insurance company.

One prime fallacy that should be laid to rest, however, is the old canard that the junkie will do you if you don't watch out. There are undoubtedly a few lice in this particular woodpile as there are in any business—buyers of stolen parts and the like—but in the main the wrecking yard operator is as reputable a businessman as the used furniture salesman, except that he's in the business of buying cars and selling parts. Without the wrecker there would be far fewer immaculate classics on the road today. The wrecker's scale of prices is pegged not so much on what the market will bear, but on the cost of the original car from whence the parts came, coupled with labor and overhead. Since most of his raw material comes from otherwise unsaleable wrecks the scale can ordinarily be fairly low. However, in the case of imports it runs a bit higher in the natural course of things, since such wrecks are far more rare than those involving Detroitware. Not all operators are interested in imports but those that are will bid high for promising Jaguars, MGs, Volkswagens and the like, due to the constant demand for such material. The result is that prices are a bit higher than for similar Detroit-built parts. Even so, the prices asked are far below the as-new cost of an item that may even be impossible to purchase over the dealer's counter.

Both Jerry and Tony have been at the parts salvage business for many years and on the import parts bit for the past several. They're sure it has a future. It probably has—foreign cars have "arrived" judging from the interest in their bones.

If you should ever get to the point where a genuine tree-wood dash panel is mundane, you can always pick up a stock unit.

Jowett-powered roadster,


an F.J. TR-2 racer,

THE SADLER CHEVROLET SPECIAL


then a Chev-8, all-independent road-racing bomb

By EDWARD MONROE

IF a history of sports car specials is ever written, it will predominantly tell of cars which were designed (or at least intended) from the very beginning to beat everything in sight without costing a fraction as much as the factory racers. Most of these cars are interesting and even fascinating; but many of them did not really succeed in their object, as they either did not win or else they cost a not-very-small fortune. It is with real pleasure that we tell the history of Bill Sadler's Special, which has evolved over several years from a Class F machine, starkly garbed in aluminum, to a Class C entry with a streamlined fiberglass body and fully independent suspension, a car which beat *all* comers at Britain's premier sprint meet, the Brighton Speed Trials. One of the steps along the way was the installation of a fuel injection system of his own design on a TR-2 engine. Now TR-2s are in Class E, so you know there's been plenty of activity.

The special first came into being during the winter of 1953-54. A tubular frame was built to mount Jowett Javelin suspension components. While the first engine was from the same Jowett Javelin sedan which supplied the suspension, provision was made for the installation of the larger engines which came later.

The torsion bar suspension system of the Jowett provided a springing medium which had low unsprung weight and a variable rate. These torsion bars were designed for a car weighing more than the special so they always had ample strength and stiffness. By making the anchorages adjustable, the ground clearance of the car could be adjusted and one wheel or one set of wheels could be adjusted independently of the others, thus providing a simple means of altering the handling characteristics of the car.

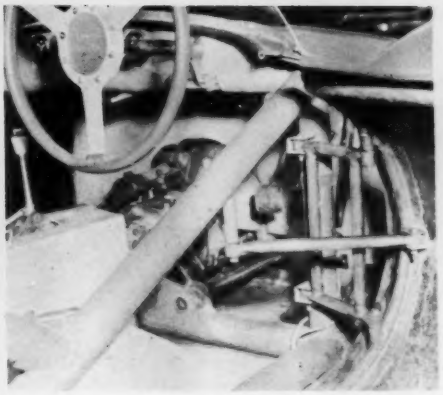
The solid rear axle of the Jowett was retained. However, Bill considered the gears unsuitable for his modified engine so he replaced them with 4.11 Studebaker gears which fitted the Jowett carrier perfectly.

A Morris Minor rack and pinion system was converted to right hand drive by turning it upside down. Combining the Morris tie rods with the Jowett steering arms resulted in a

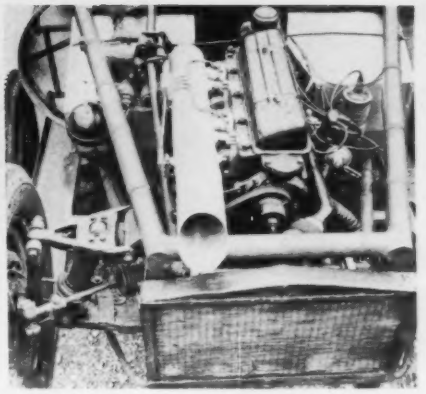
First version of the Sadler had immense tube frame with rear end taken directly from a Jowett Jupiter.

Jowett i.f.s. was welded in place with torsion bars running straight fore and aft. They too had adjustable anchorages.

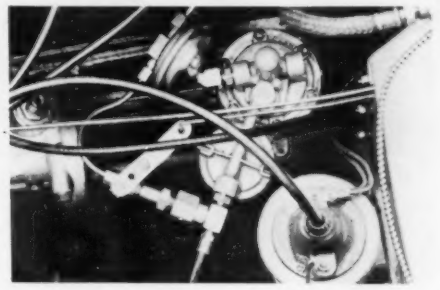
Fiberglass body panels were stiffened with pieces of tubing bent to shape, fixed to inner surface with resin, cloth.



Two doors of regulation size were fitted to give access to frame, cockpit. Four bar linkage used to clear body panels.



U-jointed steering by-passes home-built fuel injection ram tube. Metering valve is operated by throttle butterfly lever.



Modified 10 psi pump (right) feeds fuel into metering block on side of ram tube (left), controlled by push rod, metering rod fitted with 21 O-rings (one seals, 20 act as spring), enters airstream through dump tube (far right) made of carb jets.

ratio providing two turns lock to lock.

For the 1954-55 racing seasons, the Sadler was equipped with a 1486cc Jowett Javelin engine, whose modifications included a reground camshaft, Jowett competition outer valve springs and Austin Healey inner springs, Jupiter R1 pistons, and a lightened flywheel.

The Sadler Special made its first appearance at the 1954 Watkins Glen race equipped with an aluminum body and cycle fenders.

In January 1955, Bill started work on the fiberglass body. at his St. Catherine, Ontario home.

Pieces of small diameter tubing were shaped to the outline which the new body was to have. These pieces were tack welded to the frame and served to support a covering of metal lath. The lath was given a coat of plaster which was worked until it was very smooth, thus forming a male mold. Two layers of glass cloth and resin were laid on this mold. After the fiberglass had cured, the mold was removed from underneath the body. Sections of ¾" mild steel tubing were shaped to fit the under surface of the body and were cemented to it with fiberglass material, adding to the strength and stiffness of the body.

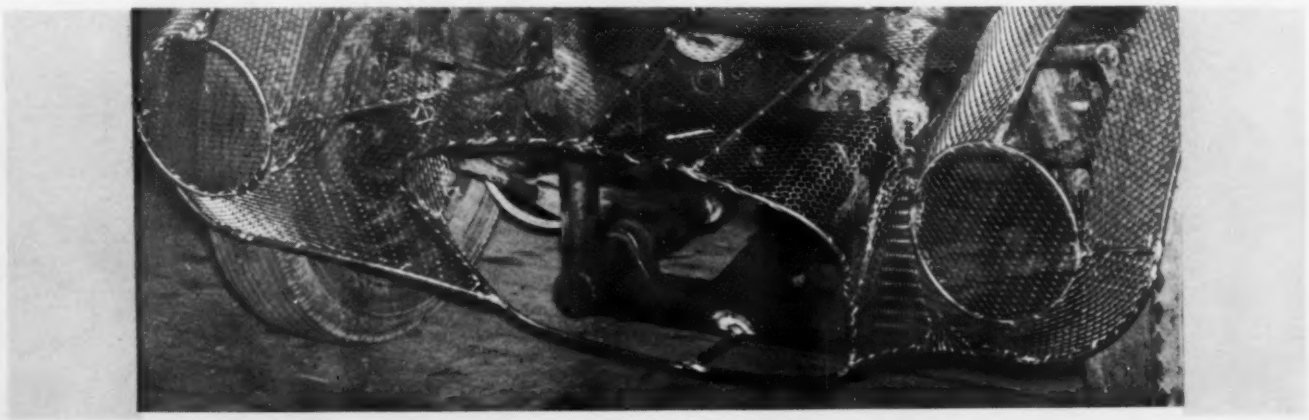
By the end of the 1955 season, Bill felt a strong desire for more power. He was now thoroughly familiar with the handling of the car and had acquired a fair amount of competition experience.

During the following winter he replaced the Jowett engine and transmission with those of a TR2. In action, this powerplant called attention to itself by its earshattering exhaust. What held attention, however, was the fuel injection system designed and fabricated by Bill who wasn't influenced by knowledge of existing F.I. designs. Comparatively simple, it proved itself to be practical for competition purposes.

This system consists of a modified TR2 fuel pump with a bypass installed, a special metering block, a needle type metering valve, individual dump tubes for each cylinder, a ram tube containing a throttle-butterfly valve and appropriate linkage between the metering valve and the throttle.

The diaphragm spring in the standard AC fuel pump was

Expanded metal lath was hand formed, wired to brazed rod outline of body shape, coated with plaster, smoothed out.



THE SADLER CHEVROLET SPECIAL
SPECIFICATIONS

POWER UNIT:

Type	Chevrolet V-8
Valve Arrangement	Pushrod, in-line ohv
Bore & Stroke	3.875 x 3.00 in (98.4 x 76.2 mm)
Stroke/Bore Ratio	0.774/1
Displacement	283 cu in (4640 cc)
Compression Ratio	10.5/1
Carburetion by	dual quads, later changed to two Ford Holley dual choke carbs.
Max. Power	290 bhp @ 7200 (250 bhp @ 6500 rpm with Holleys)

DRIVE TRAIN:

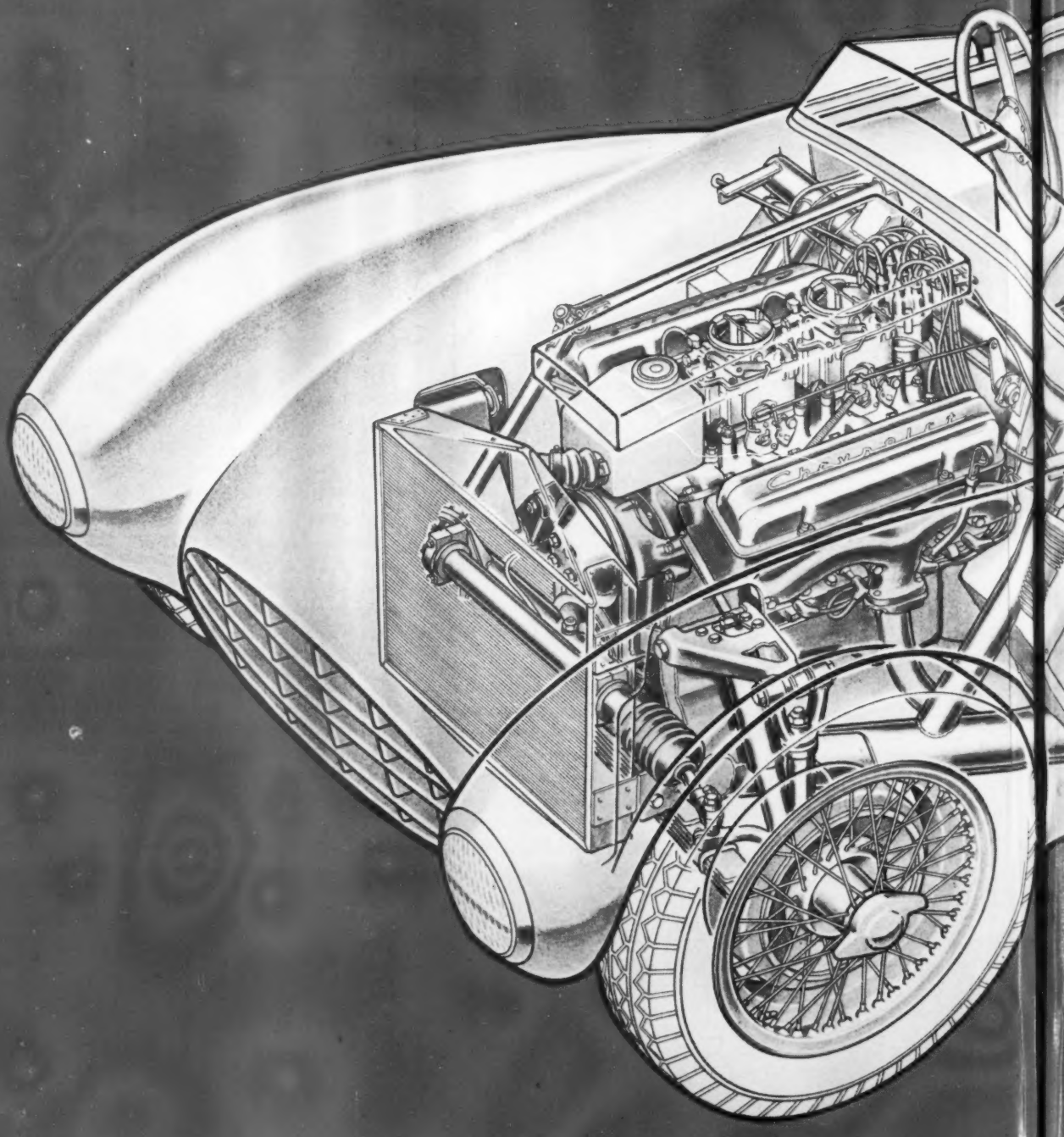
ENV Transmission ratios I	3.31
II	1.95
III	1.35
IV	1.00
Final drive ratio	3.78/3
Axle torque taken by radius rods, added in England	

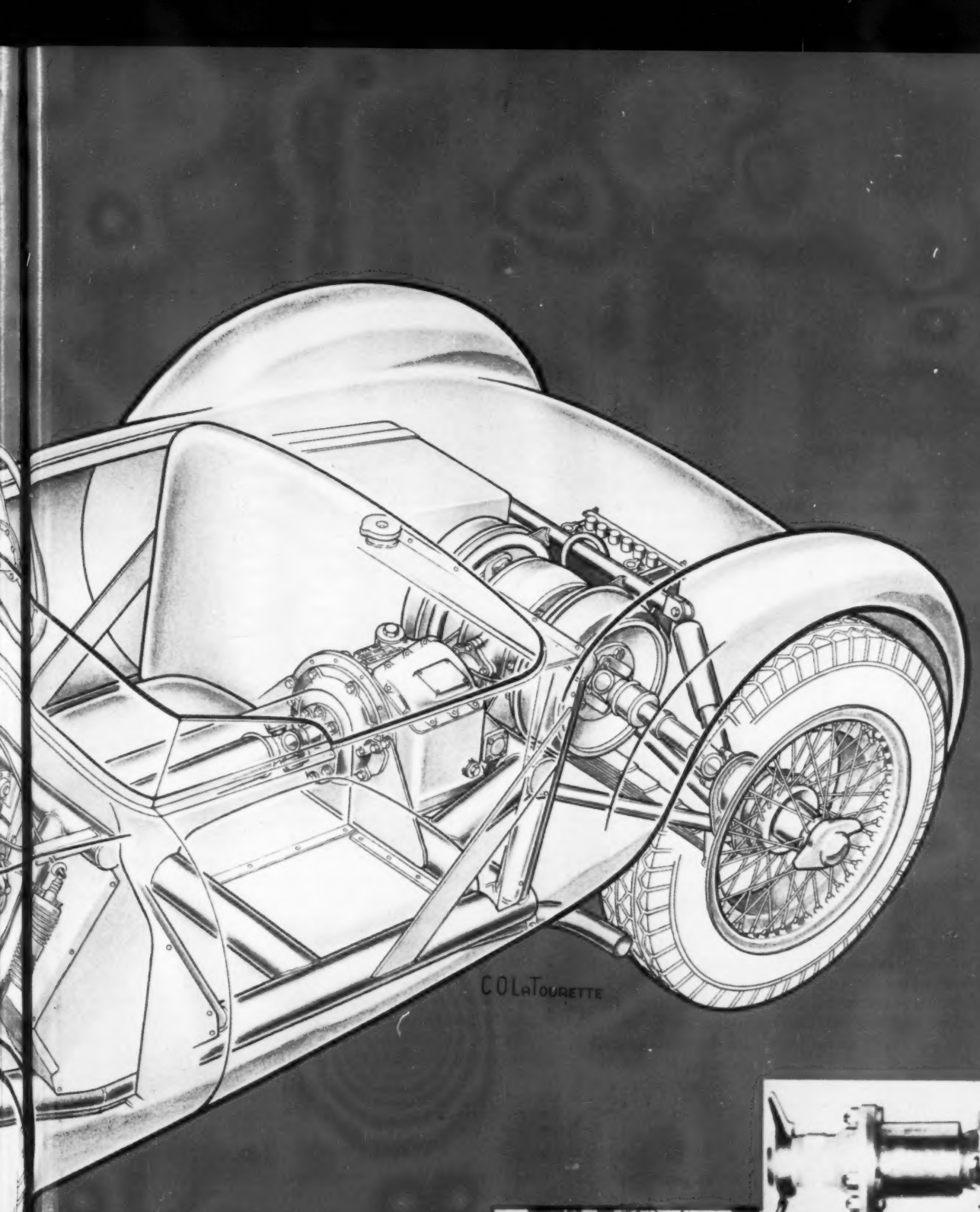
CHASSIS:

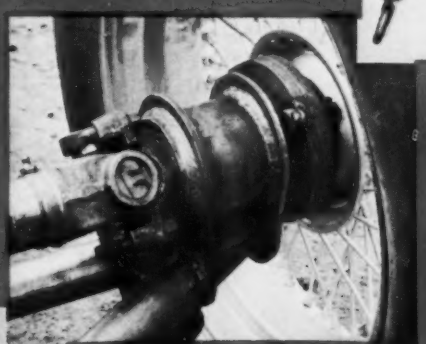
Wheelbase	90 in
Front Tread	52 in
Rear Tread	50 in
Suspension, front	Upper wishbones, low transverse leaf spring. Lately changed to double BMC wishbones, coil-shock units.
Suspension, rear	Low pivot-point swing axle, low transverse leaf spring
Shock absorbers	Tubular hydraulic
Steering	Morris Minor rack and pinion
Brakes	Austin-Healey drum type, mounted inboard at rear
Brake lining area	188 sq in
Tire size	6.00 x 15 front, 7.00 x 16 rear
Weight with 6 gallons of fuel	1620 lbs

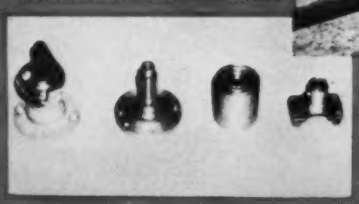
RATING FACTORS:

Bhp per cu. in.	1.02 (0.88)
Bhp per sq. in. piston area	3.06 (2.64)
Pounds per bhp	5.6 (6.5)
Piston speed @ 60 mph	1335 fpm
Piston speed @ max bhp	3600 fpm
Brake lining area per ton	232 sq in

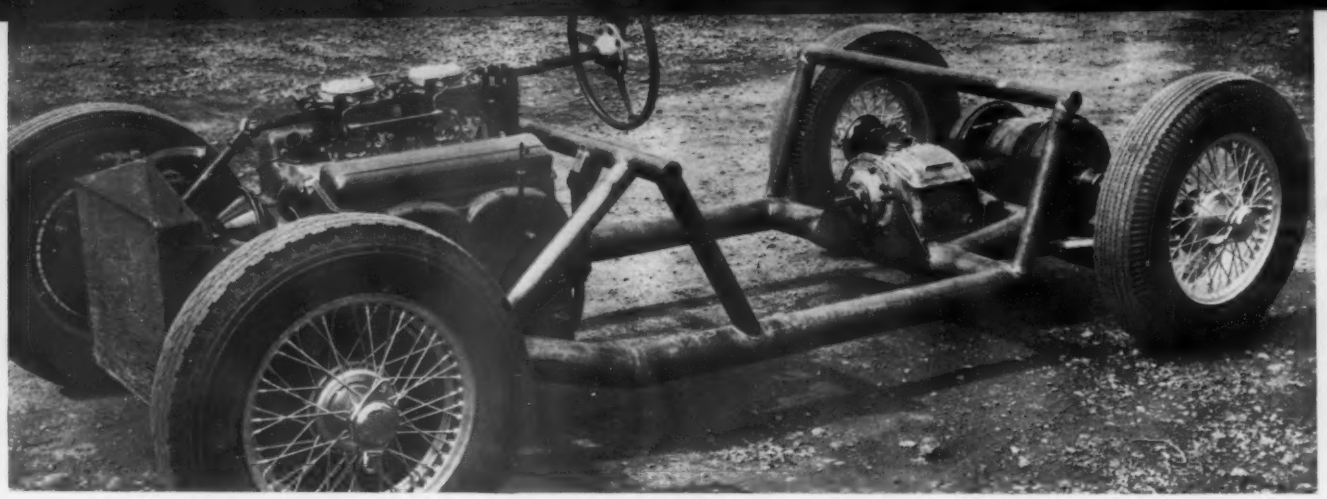








Austin-Healey hubs, GMC 3 ton truck U-joints, plus plenty of ingenuity adds up to the outboard end of an independent rear that can handle vast torque of big-inch American engines.



To make sanitary installation of an independent rear suspension Sadler built entirely new frame, still used some Jowett ifs pieces.

replaced with a stiffer one to enable the pump to produce at least 10 psi.

An adjustable bypass valve was installed between the pump inlet and outlet in order that the delivery of the pump could be more accurately controlled.

The metering block, a small block of aluminum, was drilled and tapped to accept a fitting for the line leading from the pump. This passage leads to a jet, whose effective opening size is controlled by a metering valve. The movement of the metering valve is in turn controlled by the throttle linkage. From the jet a passage leads to a main chamber in which four holes are drilled at right angles. These holes are outlets for the lines leading to the dump tubes. The dump tubes were made from carburetor jets.

Gas is supplied to the metering block at a fixed pressure.

By measuring the volume of fuel which would flow through various sized jets in a given time at this pressure and comparing this volume with the computed volume of fuel that the engine *should* consume at maximum output in the same time, a size (0.026 in.) was found which would permit sufficient fuel to flow to supply the needs of the engine at wide open throttle. These jets were soldered into tubing fittings. These dump tubes are screwed into openings in the intake tubes leading from the ram tube to the ports. The dump tubes are just long enough to extend to the center of the airstream in order to prevent the fuel sriking the walls of the intake passage.

The ram tube was fabricated from sheet aluminum. Bill cut intake tubes from the original manifold. Then he cut 4 holes in the ram tube to coincide with these tubes and then welded the intake tubes to the ram tube. A butterfly valve in the ram tube is connected to the gas pedal for throttling.

As the pedal is depressed, the butterfly throttle valve opens to admit more air. Simultaneously the rod which rests against the end of the metering needle valve moves back, relieving its pressure on the metering needle. The neoprene O-rings, which surround the needle and serve the double purpose of seal and spring, cause the needle to move away from its seat allowing gas to flow to the main chamber. From there it travels through the individual passages to the dump tubes, entering the air stream in the ports.

The TR2 proved to be very lively with this system. The fuel air ratio was good in the range from 3000-6000 rpm. Below this it became too rich. However, since an engine is tolerant of overly rich mixtures, this did not give trouble. Bill has in mind plans for automatic control of the bypass valve which should give proper ratios throughout the range. The idling system had not been installed on the TR2 and it was necessary to keep treadling the throttle while warming up. Plans called for a small idle jet located at the throttle valve to permit a reasonably slow idling speed.

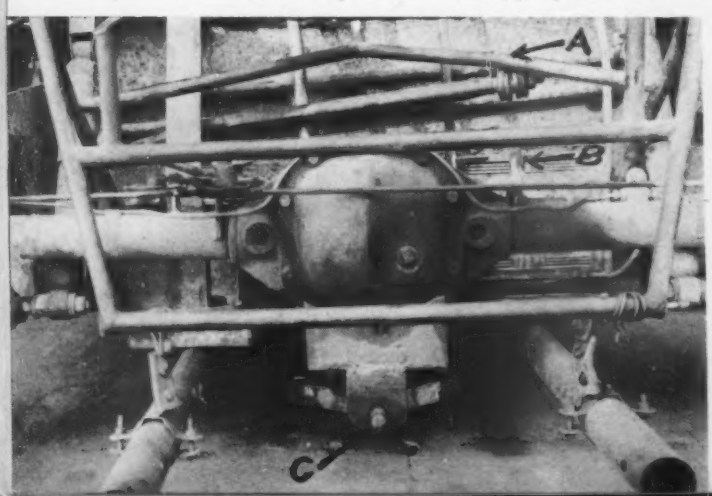
At the August 4th Harewood meet, Bill was troubled with the engine throwing oil. No oil would appear at ordinary speeds but under racing conditions, the side of the engine would suddenly become covered with oil. By race time, he had been unable to locate the source of this leak and consequently he lost so much oil during the race that he burned a rod.

Before Bill had time to repair the TR2, he had an opportunity to get a Canadian-built 1956 Corvette engine. Again he succumbed to the urge for more power.

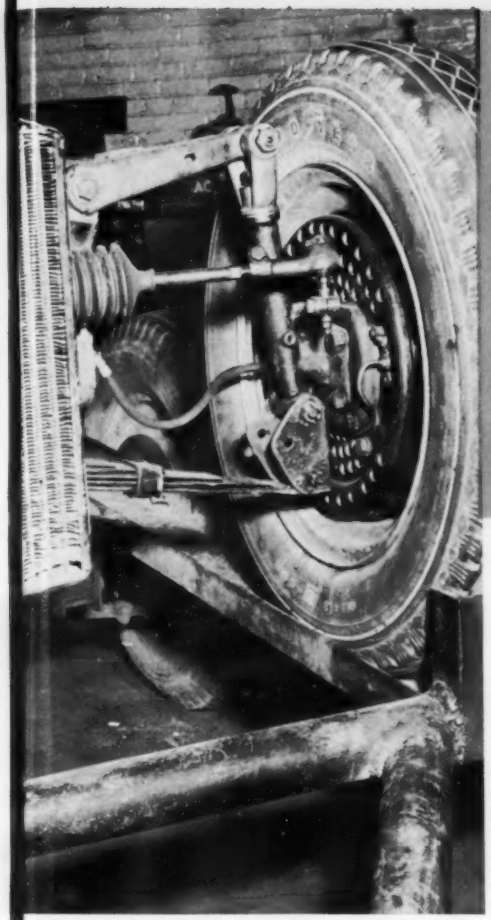
The engine was assembled to racing clearances by taking advantage of the slight tolerances permissible when machin-

(Continued on page 50)

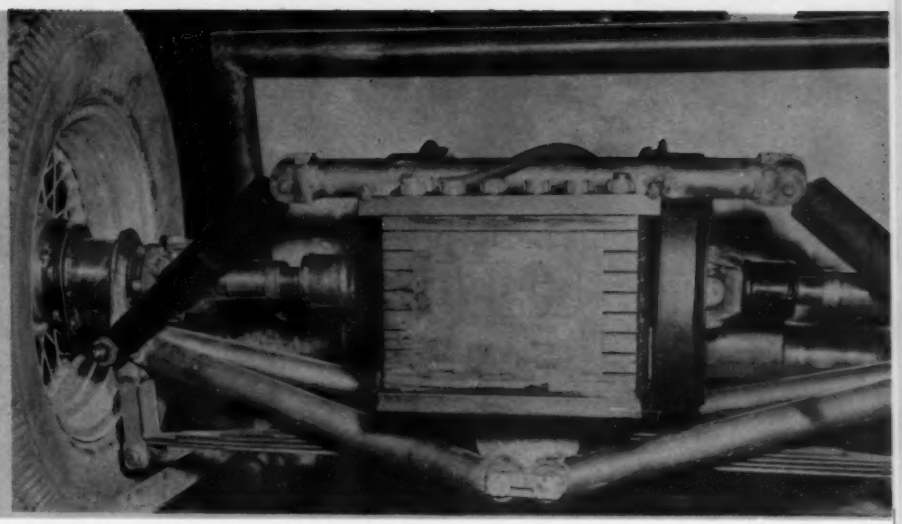
Vast increase in power available caused wheelspin problems. Sadler disconnected Panhard rod (A) from frame bracket (B), installed built-up A-bracket, dropping roll center to C.



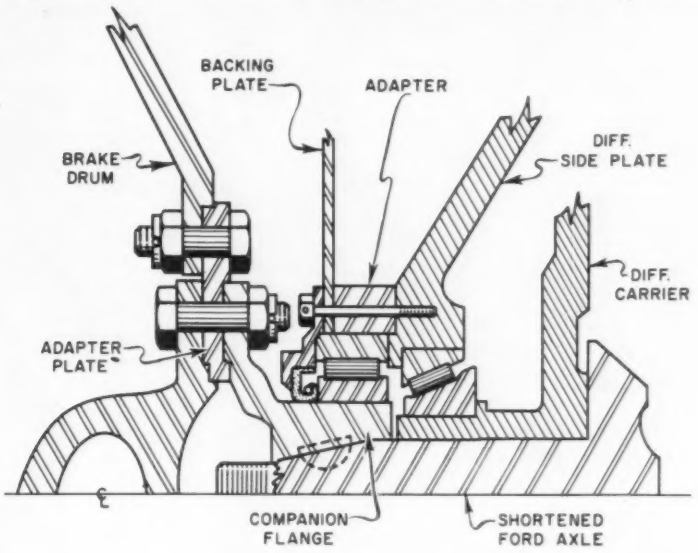
1958 Chevrolet V-8 was "easily" lowered into space formerly occupied by Jowett and Triumph engines. Bill used shock absorber eyes as engine mounts to limit movement within frame.



On the all-new frame, torsion bars were abandoned. Original Jowett spindles and kingpins were shackled to transverse leaf spring. Drilled out Austin-Healey backing plates, drums, wheels added.

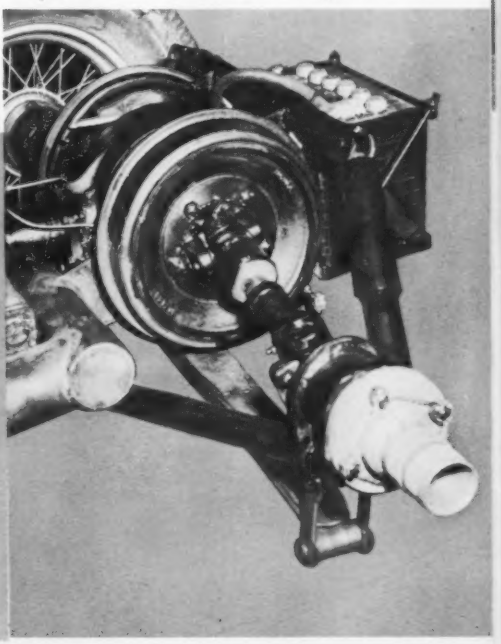


Low pivot point swing axles, similar to Mercedes and Porsche sports-racing cars, were made up, ingeniously using standard American parts with simply fabricated brackets and tubes. Trailing radius arms were added later to prevent toe-out.

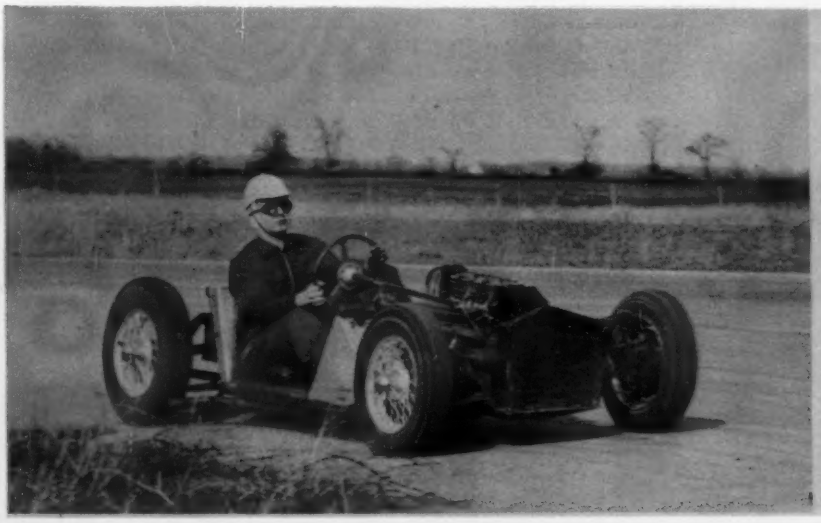


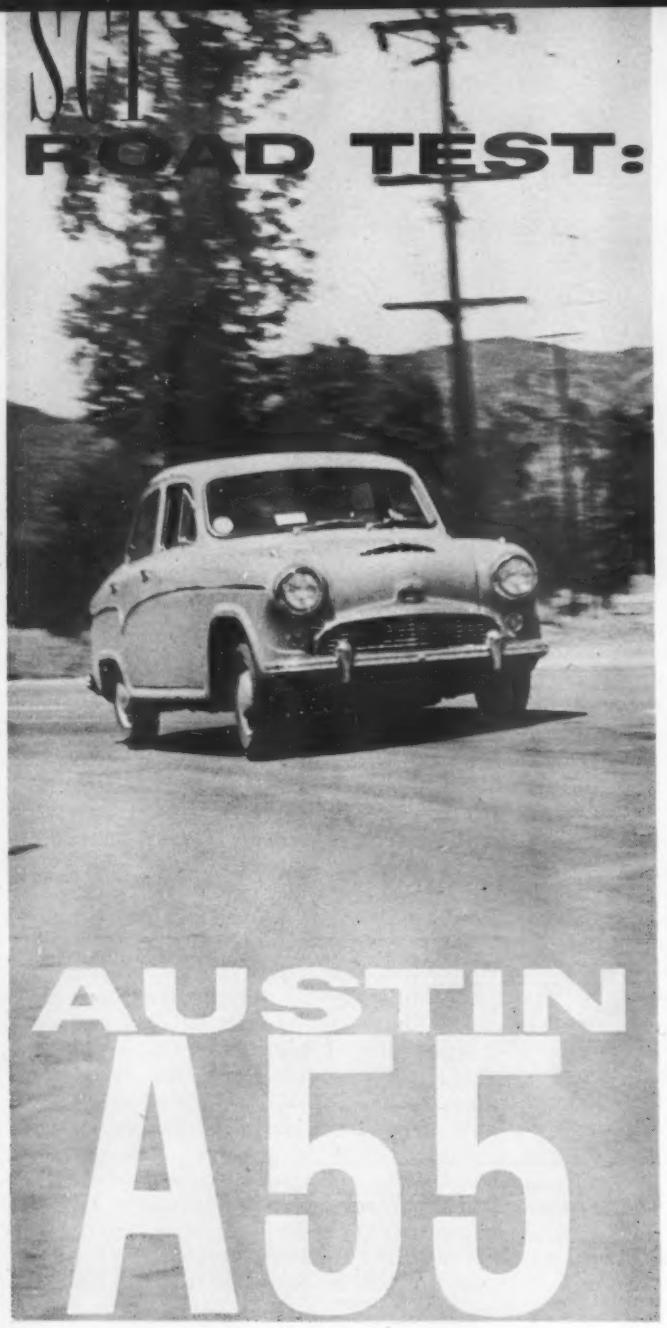
Heart of Sadler's independent rear suspension is Ford V-8 diff case. See text.

Entire frame ends at rear wheel centerline, contributing to stubby lines. Short adaptor connects ENV box to diff.



Before leaving for England, Bill tried out latest version without the body at Harewood race course. Highly encouraged by performance, he happily departed.





Austin A55 was SCI staff car during BMC record runs, covering 2127 miles. We were fond of and confident in the car, as it pulled well and handled well in the mountains. BELOW: During fast cornering the suspension works hard and the car stays flat. With a full load steering is light and predictable.

BOUND for Bonneville last autumn to cover the BMC record runs, our choice of wheels was an Austin A55 four-door sedan. It was roomy enough to carry the mass of impedimenta required for such an expedition and it also could claim blood relationship to the 245-mph MG streamliner, EX-181. Both cars, for example, use the same cylinder block, that of the BMC B-type engine. By the time we returned the A55 to Gough Industries, the Western U.S. distributor, we had lived with the able and willing compact sedan for over 2000 miles. Most of these were SCI-driven but the car also was shaken down by much of the exclusive talent congregated on the Salt, including Stirling Moss, Phil Hill, MG chief engineer Syd Enever, and British Petroleum's Brian Cooper. This resulted in an unusual cross-section of interesting opinion.

The most controversial feature of the A55 is undoubtedly the Manumatic automatic clutch with which our test car was equipped. This device eliminates the clutch pedal. The lightest touch on the column-mounted shift lever disengages the clutch and from then on a system of solenoids and vacuum-actuated controls regulates engine revs and the declutch-reclutch operation. Even though you may have the throttle on the floor during gear changes, it is totally under the control of the Manumatic brain which opens and closes the throttle at its own placid pace. Moss frankly liked the Manumatic, as he liked almost everything about the car. He is a firm advocate of the smaller personal car wherever traffic conditions are at all heavy. But the majority of us—let's just say the SCI personnel—did not regard the Manumatic approach to two-pedal control as something we'd care to own and, above all, turn our wives loose with.

One reason is that the centrifugal clutch employed remains all-off until engine revs reach a brisk clip, when it engages suddenly and the car jumps forward or backward, depending upon the gear you're in. This is scarcely a disadvantage in wide open areas, but in moderately tight parking spaces it gives cause for concern and real care. Another thing, the centrifugal clutch makes clean, silent double-clutch downshifts to first gear impossible, desirable as they would be in a car of the A55's displacement, torque and gearing. Another price paid for the luxury of automation is very slow gear changes, no matter how quickly the shift lever is moved.

So we prefer the manual transmission, particularly for city use which demands constant gearbox work. We also criticise the balkiness of the A55's column shift, a nagging annoyance in an otherwise highly satisfying and well-engineered car. We found it necessary more than a few times to start out in second because it was impossible to engage first. Especially since the A55's front seats are intended to accommodate only two persons in genuine comfort, it seems that Austin would do well to return to the clean-cut and foolproof floor-shift gearbox that still is used on, for example, its sister car, the Wolseley.

The A55's engine is almost identical to that of the hardy, punishment-immune MGA. The only major visible difference is the single carb on the A55 in place of the dual arrangement on the MGA. Realizing this, you expect the Austin's engine-noise level to be on a par with that of the MGA and you're surprised to find it very silent, right up to the top end. A different camshaft giving a lower rev peak, probably less-stiff valve springs and good sound-proofing of the engine compartment all contribute to this, making the A55 a properly quiet family conveyance. In our experience, the four cylinder ohv engine fired up almost instantly after standing for hours in cold, wet weather and, other than a loping idle, was smooth as a six at all other engine speeds. It has the same, soft, easy throttle response that often is associated with sixes.

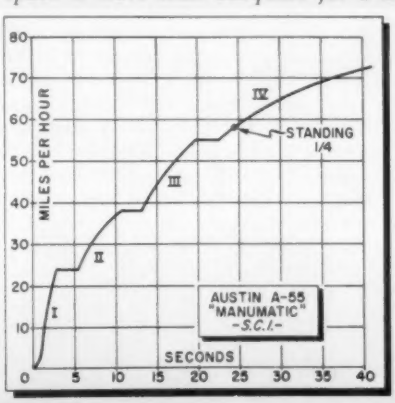
Austin of England has built an enviable reputation over the years by emphasizing the practical rather than the spectacular, by stressing durability, economy and comfort rather than glitter and go. In keeping with this, the A55's performance is serviceably thrusty without being hot. Its "go" aspect most worthy of comment lies in its high speed range.

(Continued on page 63)

Sterling Moss drove our test car: ". . . just the motor car for modern city traffic". He also liked Manumatic clutch, wide-opening door and genuine leather seats.

A55 is powered by BMC B-series engine, basically the MGA engine with one carb and milder cam. Clutch control is at upper right; engine accessibility very good.

Editor Christy jacks up both wheels from one side jacking point. Spare tire tray is lowered by a spinner. Trunk space is more than adequate for a small car.



AUSTIN A55 DELUXE SEDAN with MANUMATIC TRANSMISSION

TOP SPEED:

Two-way average	79.8 mph
Fastest one-way run	81.4 mph

ACCELERATION:

From zero to	seconds
30 mph	7.0
40 mph	13.7
50 mph	17.0
60 mph	25.9
70 mph	35.9
Starting ¼ mile	24.4
Speed at end of quarter	58 mph

SPEED RANGE IN GEARS:

I	zero to 24 mph
II	zero to 38 mph
III	10 to 55 mph
IV	13 to top

SPEEDOMETER CORRECTION:

Indicated	Actual
30	30
40	41
50	51
60	62
70	72
80	82

FUEL CONSUMPTION:

Hard driving	18.5 mpg
Average driving (under 60 mph)	25 mpg

BRAKING EFFICIENCY: (10 successive emergency stops from 60 mph, just short of locking wheels):

	per cent
1st stop	60
2nd	60
3rd	57
4th	57
5th	55
6th	51
7th	50
8th	50
9th	50
10th	50

POWER UNIT:

Type	In-line four-cyl.
Valve Arrangement	Pushrod ohv.
Bore & Stroke	2.875 x 3.5 ins (73 x 89 mm)
Stroke/Bore Ratio	1.22 to one
Displacement (Engl. & Met.)	90.9 cu ins (1489 cc)
Compression Ratio	8.3 to one
Carburetion by	Zenith single-throat
Max. Power	51 bhp @ 4250 rpm
Max. Torque	81 lb-ft @ 2000 rpm
Idle Speed	450 rpm

DRIVE TRAIN:

Transmission ratios I	3.95
II	2.41
III	1.43
IV	1.00
Final drive ratio (test car)	4.30
Axle torque taken by	leaf springs

CHASSIS:

Wheelbase	99.25 in
Front Tread	48.50 in
Rear Tread	49.00 in
Suspension, front	Independent; coil springs and unequal-length wishbones
Suspension, rear	Semi-elliptic
Steering type	Cam and peg
Steering wheel turns L to L	3
Turning diameter	37.5 ft.
Brake type	2 leading shoe front; one leading, one trailing rear
Brake lining area	121 sq in
Tire size	5.90 x 13

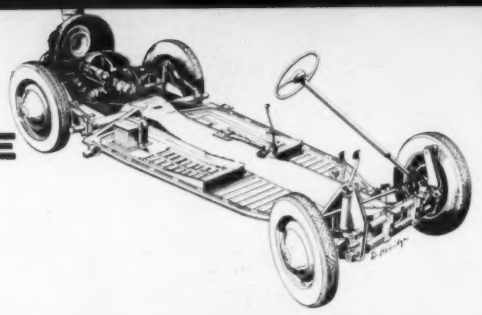
GENERAL:

Length	176 in
Width	61.5 in
Height	60.5 in
Weight, test car	2360 lbs
Weight distribution, F/R	55.5/44.5
Fuel capacity	10.5 U. S. gallons

RATING FACTORS:

Bhp per cu. in.	0.56
Bhp per sq. in. piston area	2.32
Torque (lb-ft) per cu. in.	0.89
Pounds per bhp—test car	46.3
Piston speed @ 60 mph	2210 fpm
Piston speed @ max bhp	2480 fpm
Brake lining area per ton (test car)	102.5 sq ins
Mph per 1000 rpm	15.84

SCI HOW-TO FEATURE



BODY FOR A BEETLE

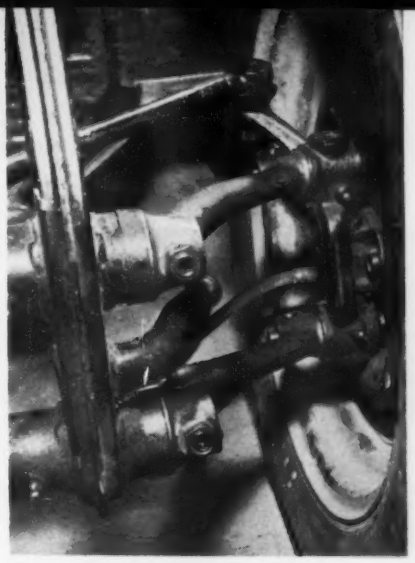
VW – Devin PART II

by Bob Behme

Because the Devin body is lighter than the original sedan, and also because ground clearance is not the important factor that it is on a family car, the front suspension should be lowered. You can't do it by torching the springs or chopping off a coil though. Instead, you must carefully determine how many inches less clearance you want and how much difference the lighter body will make. The total change in height can be translated into an angular change in the static position of the trailing arms. At the front this can be done by repositioning the fixing clamps at the center of the torsion bar tubes. The purists will want to lower both the upper and lower bars equally so that stresses are equally distributed, but if you're in a hurry, you can move just one (the Tech Ed. says that in this respect at least, he's a purist). Buckland was a purist, too, until he discovered he'd lowered too far, so he sacrificed purity for ground clearance, putting the lower tube back to stock as shown in these pictures. Going or coming, the process is the same.

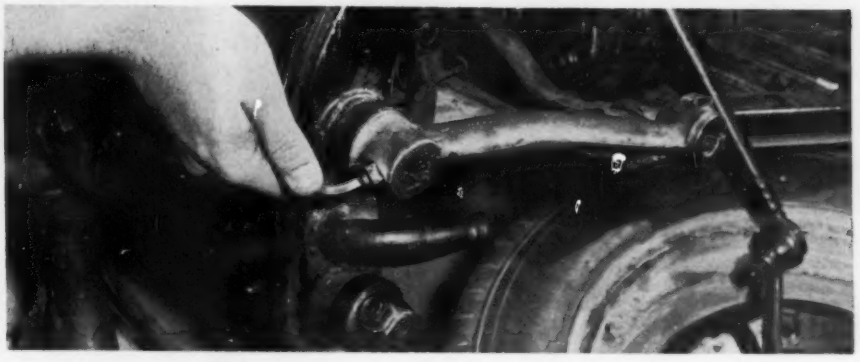
10

Jack up the front end so the wheels hang free. Brace the chassis securely. Remove wheels, brakes, backing plates, stub axles and trailing arm links. Measure distance from each trailing arm to floor for checking later on. Now remove the trailing arms, the torsion bars and finally the tubes (which are part of a welded-up front cross member). Scribe a straight line on the tube(s) to be cut. Cut through only one tube at a time (or you'll be a very puzzled purist), cutting out a section about four inches long at the center of the tube. Make sure that the cut is exactly square, so that the piece you've removed can be easily repositioned. On Buckland's VW, after a bit of the old cut-and-try, the lower bar was left in its stock position and the upper tube was rotated 35° (forward at the top) which raised the static position of the trailing arm three inches, measured at the link pin hole. This gave a net drop of about an inch and one half. This will not be the best figure for each VW-Devin conversion, as VW front springs gradually settle, especially with a lot of hard driving. Remember, about 24° per inch of drop if you cut only one tube, and half that if you cut both. Twelve degrees works out to a quarter-inch gap between what are now two scribed lines. After tack welding the center piece in its new position, clamp the front suspension beam to the frame, slip the torsion bar in place, attach the trailing arm and measure the distance to the floor and compare with your previous measurement. When you've got just the right drop, finish weld the joint.



11

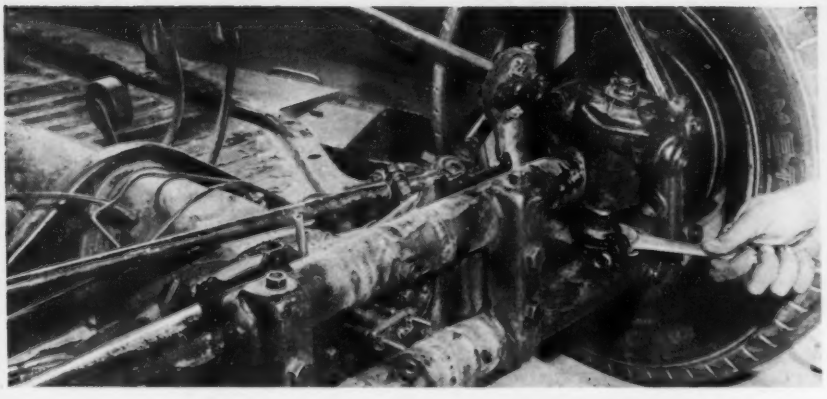
If the lowering is all done on the upper bar, this is what the trailing arms look like in their free position. Install the link pin in the unchanged arm first, then lower the weight of the chassis onto wheel, deflecting that bar to permit easy insertion of the other link pin.



12

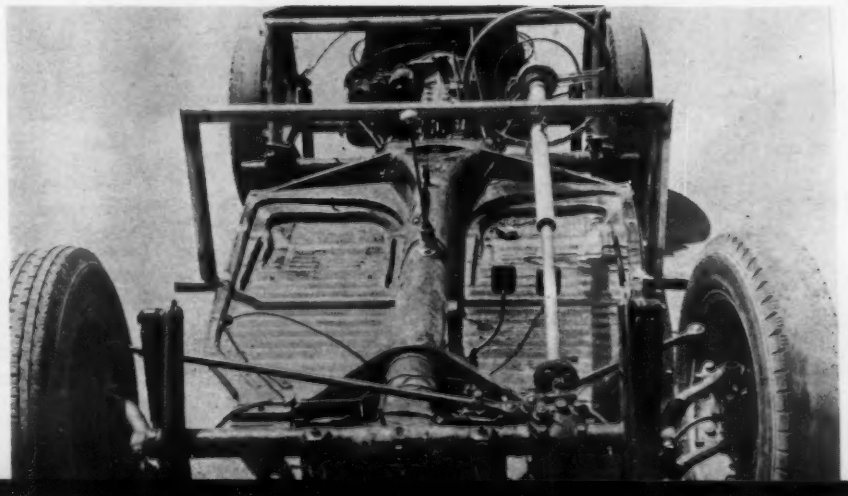
Lowering the rear suspension is much easier than the front. Remove the sheet steel trailing arm from the swing axle tube and then from the torsion bar tube. This exposes the rear torsion bar, which has 44 splines at the outer end and 40 at the inner, permitting angular adjustments in increments of 50′. Buckland reset his to get zero camber at the rear wheels. Small negative camber, as on the Porsche Spyders, is quite permissible, the important thing being to have the same setting on both sides. As at the front end, the bars may have settled, so each car will be an individual case. Be sure the transmission is firmly bolted in place before making this adjustment.

13

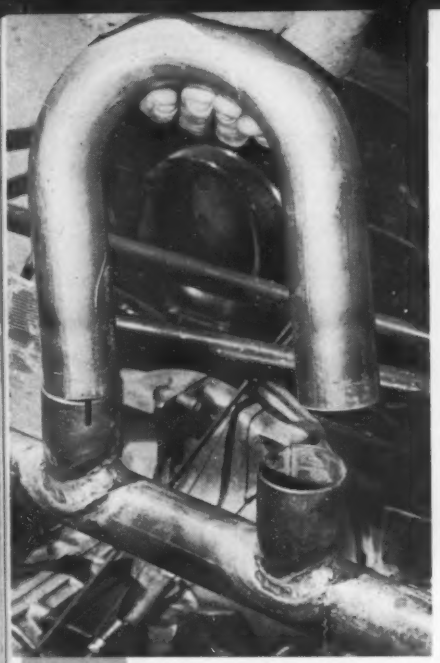


Steering box must be tilted slightly because the column is lowered as well as lengthened. Just loosen the clamping screws a little and rotate the box so that it lines up with the steering column. At this time the column should be wired to the underside of the front roll bar. Do not move the box sideways as this will alter the wheel alignment in corners. After tightening the clamping bolts, check the toe-in: it should be between 1/16th and 1/8th of an inch, measured at the wheel rim.

14



This is what your de-shelled beetle should look like now. Next major step is building up a trusswork of tubes to add rigidity to the frame and provide mounting points for the fiberglass skin. While you're waiting for your torch to warm up, you might get your local VW dealer to check the alignment of the front trailing arms, making sure that the ten shims per link pin are properly distributed.

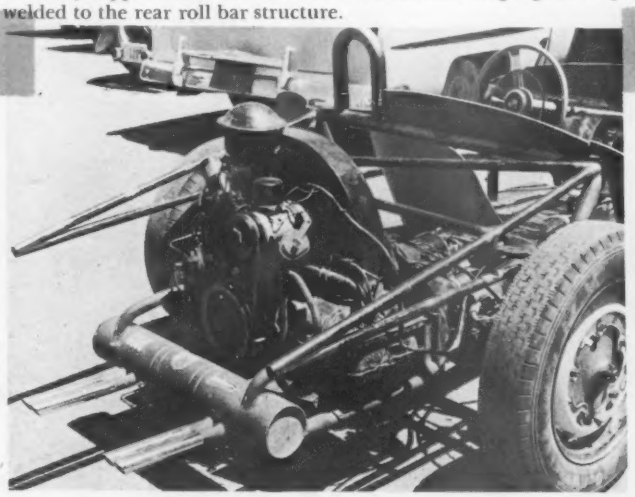


15 A standard U-shaped piece of ready-bent tube is ideal for the headrest. Collars of one-size-larger diameter tube are welded to the rear roll bar; later the U-tube can be fitted in them and welded at exactly the right height to fit the fiberglass headrest fairing.

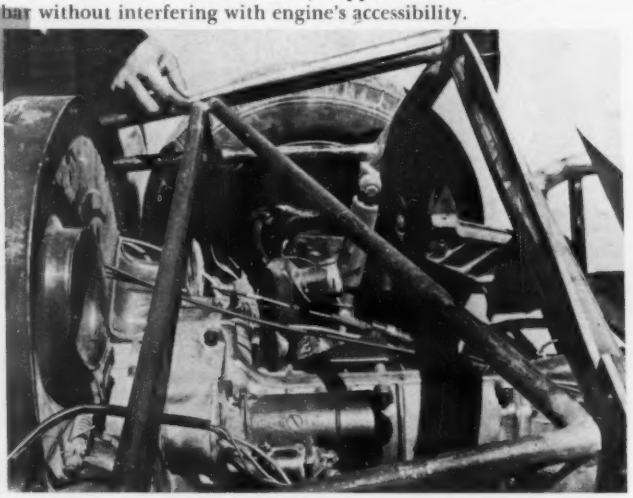
16 An extension of 18 gauge steel is welded to the floor panels to provide a lap joint with the edge of the Devin body. Width of extension is determined by fitting body to the car and measuring.

17 Rear body former is also made by fitting and measuring. Use plywood, metal, or even cardboard laminated with fiberglas and resin.

18 Aft body supports are made of one inch diameter, 20 gauge tubing welded to the rear roll bar structure.

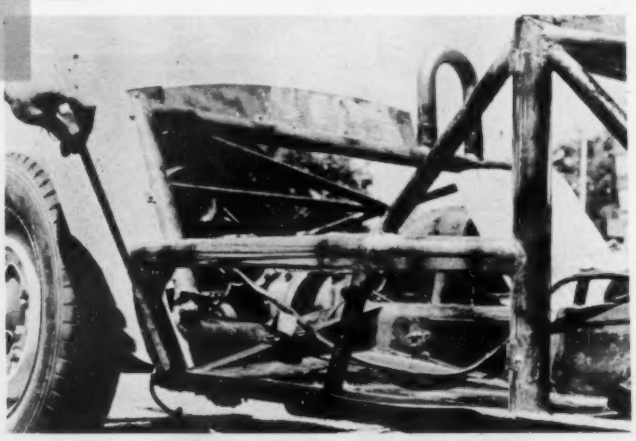


19 Two transverse tubes brace body supports 17 in behind the roll bar without interfering with engine's accessibility.



20 1.75 in tubing is used to make door sill. It is supported by intermediate struts of one inch tubes. Commercially bent tube may be used but it isn't necessary.

21 Height is again determined by the body shell. Ends of tube can be trimmed with 1¾ in hole-saw to give neat joint against the roll bars.



Concluded next month

QUART AND A HALF

(Continued from page 17)

The 158 Alfa had a small speed-margin at this time, but there were more Maseratis and plenty of sharp private-owners to run and drive them. As a result, the two makes had comparable records before the war. Since the FIA decided to make use of all this 1½ liter equipment for a postwar "stopgap" Formula I, Alfa and Maserati were sitting high, wide and handsome when 1946 rolled around—the 4½ liter unblown cars being little competition for them at that time.

As a backdrop to the episodes of the next few years, it must be recalled that Italy had very much lost the war and could hardly be expected to rebuild the roads, let alone develop racing cars to run on them. In spite of this, the Maserati brothers had contrived to design and build a team of modified 4CL's, during the actual years of conflict. Villoresi used one of these to win the first postwar GP at Nice on Easter, '46.

In the meantime Colombo lent a hand in dusting off the Alfa Romeo team cars before leaving to create the first true Ferrari. He rigged up a two-stage blower group for the Type 158 that endowed it with 254 bhp at 7500 rpm. (On the bench in 1938 it had given 190 at 6500; as raced in '38: 205 at 7000, and up to 225 at 7500 in 1939. Those first two years were thus spent mainly in raising the reliable rev-limit of the engine and thereby increasing the output, while the postwar boost can be attributed to higher supercharger efficiency and pressures, with the rev-limit staying the same.) The 4CL Maserati was rated at 220 bhp at 6600 in 1939, and 7000 rpm were probably being used in 1946 editions.

First postwar race for Alfa was on June 9, 1946, when both Farina and Wimille broke their cars at St. Cloud. We mention this sorry day only because Alfa Romeo did not lose another Grand Prix race until July 14, 1951—and they entered *all* the big ones. Their handlers were *virtuosi*: Wimille, Varzi and Trossi through 1948, and Farina and Fangio in '51 and '52.

Development of the 158 was steady and patient, horses being up to 265 in 1947. The following year Wimille drove a new version with bigger primary blower in Rheims practice and in the Italian GP, as described before. This type, the 158/47, delivered 310 bhp at 7500 rpm as a rule, some identical engines being rated at 335 horses at 8000.

In the middle of 1947, Maserati started supplying parts for a new 4CLT model. This looked just like the 4CL, but had a tube frame instead of box-section and used the once-discarded twin blowers in series, giving nearer 240 bhp. A year later, this same engine was inserted in a greatly-revised chassis and body, the complete car being called the 4CLT/48 or *San Remo*, after its first race (and victory). Lower and cleaner, with the rakish shape of the "Wilbur Shaw" 8CTF, this modern classic of a race car was faster and handled better than its forebears, factors that helped Villoresi split up the winning Alfa trio at Berne. Later at Rheims, where Wimille had practiced with the 158/47 Alfa, Nuvolari put in several fast laps with a 4CLT/48 and called it "the best Maserati ever". When it worried the Alfas so badly at Turin, it had revised valve timing and new Roots blowers, bringing horsepower close to 250.

At this point, some ten years after their inception, both cars had settled down enough in design to give us a chance to describe them.

The Maserati had firm anchors in the past, and its engine and drive line were passed down with little change. As a matter of fact, the top end of this four-barrel seems to share the Miller heritage with a lot of other European equipment, right down to four valves per cylinder — specially suitable for supercharging and large bores. For long life in the hands of private owners, the two blocks of two cylinders each are made of cast iron, with the water jackets cast open and covered with alloy plates. Heads and blocks are integral, avoiding high boost gasket problems, and the valves are angled 90 degrees. Port faces slant out at the same degree, and have eight openings on each side instead of the "siamesed" ports of the Offy, giving an eight-cylinder look to the smooth, simple exhaust header. All valves are 1.575 inches across the head. They are closed by coil springs and opened by fingers instead of the cup-type tappets on the 4C and 8CTF. Neatly housed, the twin overhead-cams are twirled by a forward-located gear train that also drives the two blowers, one above the other, at engine speed. A colossal Weber twin-throat carburetor feeds the bottom primary blower with a concoction of 85 percent methanol, 8 percent benzol, 5 percent acetone and 2 percent castor oil. This last seven percent is primarily for cooling valves and piston heads, and lubricating the lobes of the blower. Shell supplied a similar formula to the German teams of the thirties.

Final boost is about 25 psi, piped in through a simple log-manifold with two "blowoff" or "backfire" valves. In early editions the water pump and magneto are located just under it on the right; late cars mount the pump on the nose of the secondary blower, practically under the header tank.

Surprisingly there are only three bronze-backed main bearings and no separate main caps — the entire magnesium crankcase casting splits horizontally to receive the crank and is bound together again by long bolts. Most of the 4CLT/48 crankshafts were conventional, being driven by completely machined, H-section con-rods with split, two-bolt big ends. As a last-ditch effort in the middle of 1951, the Orsi shop produced a massive, built-up crank which allowed one-piece rods and roller rod-bearings.

Lubrication is dry-sump, a feature which kept many of these Masers in the race in later days when they held oil like a hair-net. Two oil tanks were usually stowed right under the driver's seat, paying obeisance to Maserati tradition, but the newer editions had a sidesaddle tank slung on the right of the engine.

All these engines naturally varied in detail, but most were rated at 260 bhp at 7500 rpm. Later Orsi cars may have been nearer 290 with 30 pounds boost at the same revs, but it was too little and too late, though still commendable for that engine.

The four-speed, centrally-controlled gearbox is mounted in unit with the engine and drives a live rear-axle through a torque tube. A gear set at the bevel pinion drops the driveshaft to lower the driving position, this being the main change from the 4CLT in the drive train. Radius rods equal in length to the torque tube control the hubs, which are also linked to trailing quarter-elliptic leaf-springs and Houdaille shocks.

At first the 4CLT/48's also followed their predecessors in steering layout, having the steering box at the firewall with a long cross shaft from which two drop-arms and drag-links controlled each front wheels separately. Later on, the right hand drag link was eliminated and a more European split track-rod system was installed.

One wholly new feature of the *San Remo* Maser was the front suspension, which abandoned longitudinal torsion bars in favor of stumpy coil-springs operated by an inboard extension of the upper wishbone. At first this unusual mounting seems a waste of effort, but the leverages involved were such that a very stiff—small, and therefore light—coil could be used.

Also new was the chassis, which is based on two 4-inch tubes underslung at the rear and terminated by a cross tube at the front suspension mounts. Several more cross tubes and body hoops add to its stiffness. The body, of course, was completely revised—much smoother but still unmistakably a Maserati.

The *San Remo* was certainly not "basic transportation," but it was simple enough to be torn down and built up in two days by one weary mechanic in the back of a dim garage—a scene which was repeated hundreds of times from 1948 through '51 as private owners competed not only for prizes but for the expense money that would keep them in spare parts. Diametrically opposite were the Alfettas, which perhaps more than the Maseratis demanded to be torn apart after every race, but which could relax while the job was done thoroughly in the Milan workshops. These were machines that *had* to win to justify their very existence in a stringent, "recovery" economy. While reliability was certainly important, the 158 Alfa had to be able to jolt all comers off the tracks on blistering speed alone—and they did it.

Colombo's muscular masterpiece was an entirely new design, but in detail it took full advantage of the many experimental ideas that had been poured into Alfa Formula I cars during the struggle for success in the 750 kilogram formula. The 158 was a neat combination of many tested techniques.

Foundation of it all is a starkly simple, ladder frame with box-section side-members and four tubular crosspieces. At each end of the front tube are Porsche-type trailing-arm suspension units, looking precise but fragile and allowing very limited wheel movement. The top arm is directly pivoted on a friction shock and linked to a vertical tubular unit, while springing is by transverse leaf—all these same com-

(Continued on page 44)

QUART AND A HALF

(Continued from page 43)

ponents appearing at the rear end, too. Like the Maserati, there's no anti-roll bar.

Steering resembles the later 4CLT/48's, with a worm and wheel gear just above the clutch housing. A long drag link under the exhaust pipes operates a bell crank and the two slim track rods.

Many versions of Alfetta brakes were seen, with varying dimensions and venting systems, but they all had several features in common: two leading shoes all around, fine and deep finning in aluminum muffs, and drums which were set well out from the wheel to receive the full 180 mph air blast. Like most other contemporary G.P. cars, linings were by Ferodo.

Rear suspension, through most of the Alfetta's racing life, was by simple swing axle. Each bulb has a short, light, tubular radius rod which causes toe-in as the wheel rises, and as experience was gained more and more negative camber was introduced to give a greater margin of understeer before breakaway.

With a great racing heritage, the engine is classic in layout and dimensions. The straight-eight configuration is still statistically the most successful in Grand Prix racing, and the Alfa follows through by having a relatively long stroke. Though the car was much criticized for this, and its resulting high piston speed, its compact combustion chambers and high-velocity ports were very well suited to high supercharge and combustion pressures.

Another resemblance to the *San Remo* Maserati—and a characteristic of prewar design—is the combined block and head, this time of alloy with liners and shrunk-in valve-seat inserts, and the use of two such blocks of four cylinders bolted together at the center. Again there are 90 degrees between valves, but only two valves per cylinder. The alloy crankcase is split on the crankshaft centerline and houses seven roller main-bearings plus one outrigger bearing next to the flywheel and multi-disc clutch.

Unlike some earlier Alfa efforts, the 158's gear drive to the twin overhead cams runs up the front of the engine. Additional gearing and a short, flexibly jointed shaft on the left turn the small secondary blower, which in turn is geared to the big primary Roots unit. On top of the latter is a progressive triple-barrel downdraft Weber carburetor, originally with a long "elephant's trunk" air intake drawing from below and behind the slanting radiator with integral header tank. Small ducts from the intake vented the float bowls to balance fuel surface pressures.

At first, a single magneto for all eight centrally-placed plugs was stowed under the exhaust manifold, next to the water intake piping, but this was replaced by two four-plug units at the camshaft noses, where things weren't quite so hot.

Oil from the blower-drive drains into the rear of the deeply-finned sump, which is scavenged by two pumps. An oil reservoir is in the cowl, while a cooler is slung under the radiator. To its right is a duct leading to a shroud around the exhaust manifold, carrying heat rapidly away from it.

A slender drive-shaft carries torque at high revs to the rear-mounted, four-speed gearbox, coupled in unit to a limited-slip differential. The box is placed flat and has a push-pull control, much like the racing Ferrari arrangement of later years. Its lever and gate are low at the left, with a reverse latchout, and are as finely finished as the rest of the cockpit. In fact, Alfa Romeo seems to have been the only Italian firm to rival Mercedes in smooth detail-work.

Alfa Romeo again resembles Daimler-Benz in that it was a conscientious firm with an important production car program. A year off from racing in 1949 was required to develop the 1900 sedan. In the meantime the *San Remo* Maseratis had a field day running against the twin and four-cam Ferraris and Talbots, winning six out of sixteen major races and giving their owners much "go" for the money. When Alfa came back in 1950, they scored only two wins, but the 4CLT/48's were getting tired and oily and very much in need of new factory parts, which were just not available. As a result, a lot of these rugged machines were privately reworked to keep their original shape or even to improve upon it.

Typical of one approach was Reg Parnell's car, which eventually had an engine that was more English than Italian. It had bronze blocks, a special crank, and a longer-than-stock primary blower, among many other things.

Nor had the Maserati brothers abandoned their brainchild. While turning out odds and ends for their new OSCA Formula 1 car, they just-by-chance came up with a 295 bhp 4½ liter V-12 which could be dropped perfectly into the San Remo chassis. Prince Bira had such a swap made, which put him back in the running for some minor 1951 events, but the V-12 never poked out sufficient horses.

In 1952, most promoters turned to the unblown two liter Formula 2 and Maserati owners had a new problem. The resourceful Enrico Platé stripped the blowers off his brace of cars, rebuilt the engines to the larger size and chopped eight inches out of the frames. With two twin-throat Weber 35 DCO carbs they produced some 150 horsepower, and in spite of a weight disadvantage they gave Schell and de Graffenried some very good rides. These cars, plus an experimental Orsi-Maserati based on them, were rebodied as "Buranos" for *The Racers*.

All this, we hope, illustrates the point that Grand Prix racing is not always the pure science that it's made out to be, and has just as much room for specials as any other kind of motoring competition. In fact, one rich Parisian even had a *San Remo* reworked into a sports car. If, however, you *must* win every time out without fail, it helps to have an expert staff, extensive facilities and rigid control guided by experience—all assets of Alfa Romeo. The 158 had made it, and in 1950 and '51 the job was simply to keep it on top.

Since the opposition hadn't accomplished much in 1949, the type 158/47 reappeared practically unchanged. Later, in 1950, Ferrari's unblown cars started to menace, so yet more boost was applied, bringing the output to 360 at 8500 rpm. Bigger brakes were seen, too, and the type number "159" began to be heard.

In 1951, there was an occasional hint of desperation in the once-invincible Alfa team; but their engineers worked miracles to wring more power out of that straight-eight. To offset a gigantic thirst, big, side fuel-tanks were fitted, giving a total of 65 gallons, which made the cars practically undriveable for the first few laps. Also available, but never made standard, was a neat de Dion rear end. The dead-axle tube curved around behind the final drive and was located by a single, triangulated trailing arm above the center plus one radius rod below each hub. Brakes were set in at the wheels and were more shrouded by the rims than in the swing-axle versions. The cross leaf-spring remained.

Major engine revisions and still more boost allowed the 159 to scream up to 10,500 revs on the test bed and register 404 horsepower—well over double its original rating. At 9500, a more workable limit in the gears, 385 horses were on tap. Traction became a serious problem, but the cars were reaching 195 mph on the faster courses.

Sustaining this output depended a lot on the use of methanol itself as a coolant for pistons and valves. Valve overlap was deliberately made extreme to force a high-pressure draft right through the head, deliberately wasting fuel in a "fifth stroke." They were getting less than a mile and a half to the gallon. In addition, cool water was pumped direct to alternate exhaust valve guides, as is now done by Maserati. After long use of a single exhaust pipe, twin manifolds were again fitted to reduce heat loadings.

Alfa just eked out a World Championship for Fangio with the type 159A, which was used at only two races. These drew carburetor air from the cockpit or from a cowl scoop, depending on the weather, and horsepower figures of 430 were hinted at. The machines were reshaped, looking somehow bigger and stumpier in the rear and had a new, shrill blower whine, recalling the '39 Mercedes.

Excepting the sorry efforts of the V-16 BRM, which is another story altogether, Barcelona in 1951 saw the end of serious supercharged Grand Prix racing. The success of the unblown 4.5 and 2 liter Ferraris had pointed down a new road which, as pointed out in "Whence Come the Horses," has led to many technical advances.

Though they were criticized as extravagant, expensive and pointless, we still get a colossal kick from small complex machinery howling at high revs under three or four times atmospheric pressure. This was racing for its own sake, with the sky the limit. There may yet be a renaissance of blowers, in which case Alfa-Romeo and Maserati might again win two-thirds of all G.P. events between them, as they did from 1947 to 1951. Not bad for a quart-and-a-half, blown.

Karl Ludvigsen

the British. are coming!

Braving the Atlantic, Triumph's new American representatives have landed. At the dock they issued this joint statement: "The new Triumph Sedan is demonstrably superior to any motor car its size and cost." ■ Knock-down rear seats give you 30 cu. ft. of storage space. Only auto at this price with no-clutch, push-button shift. ■ Motor with TR 3 sports car engineering gives speed of up to 78 m.p.h. ■ Economical operation with 40 miles per gallon of gas. ■ Also see 1958 Triumph Estate Wagon at $1899* *Prices slightly higher on West Coast, white walls extra. Standard-Triumph Motor Co., 1745 Broadway (Dept. FS2) New York 19.

TRIUMPH SEDAN ONLY $1699*

what's new?

What's new? . . . This column, for one thing! We receive releases from all over the world offering many ideas on "things the motorist can't do without"—items from red lights on the dash that light when you hit a bump to home dynamometers that you can install in your own garage. But occasionally a product appears that is not only a good idea, but also practical. We plan to present these products and ideas to you as a regular SCI feature.

ALL-WEATHER TOP

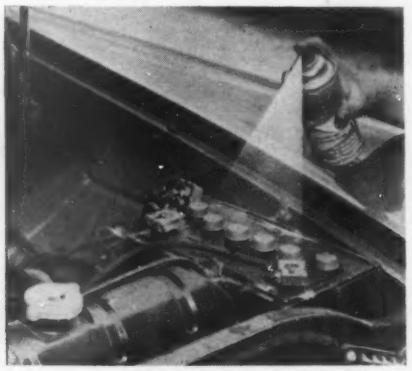
Fiberglas "SCOTTOP" for TRIUMPH TR2 and TR3—Two layers of heavy glass cloth and one layer of two ounce mat comprise this new hardtop which weighs a mere 24 pounds. The top attaches with three fasteners at the front bow, and two at the rear sides just behind the door openings. It is not necessary to drill holes to accommodate these fasteners. The bottom of the back edge is sealed to the body of the car with special white or black rubber extrusion which carries through around the window openings.

GOOD READING

Just out, and good reading for the sports car owner and/or fan is the four-volume edition of Motor Manuals by Arthur W. Judge, published by Robert Bentley, Inc. Each of the four volumes (Auto Engines; Carburetors and Fuel Injection Systems; Mechanism of the Car; Car Maintenance and Repair) is fully illustrated.

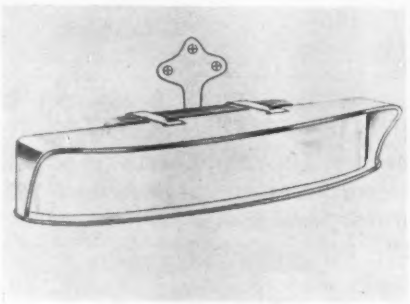
FROM FIRES TO TIRES

"Spare tire in a can" is a most descriptive name for an accessory recently introduced by Liquid Glaze, Inc. Appropriately called "SPAIRE" it not only inflates an average sized tire from zero up to 22 pounds in six seconds, but it also provides motorists with an effective fire extinguisher. This protection is in a pressure can with hose assembly and convenient bracket. "SPAIRE" is also effective in rectifying fuel pump and fuel line vapor lock, and drys up condensation on spark plugs, distributor, and wiring.



SPRAY SEALANT

Another new spray-type product is BOM-KOTE AUTOMOTIVE SPRAY SEAL. This colorless preservative, when applied to battery and ignition systems prevents corrosion and resists acid solutions. It is no longer necessary to smear the battery terminals with grease to protect them. BOM-KOTE also resists salt water and heat, discouraging oxidation.



ALL OVER THE BACK

Sta-Dri Products chrome-trimmed giant mirror slips over the rear-view mirror of all cars, to give a true reflection of *all* the traffic at the rear. Without twisting or turning, the driver is provided all-around vision that encompasses some of the side-rear areas normally difficult to observe.

SEBRING AT HOME

Exciting on the spot interviews with Fangio, Moss, Portago, Colin Chapman and many others relive the high moments of the great Sebring Race of 1957. These are featured on Riverside Record's new album SOUNDS OF SEBRING 1957. The album contains two twelve-inch LPs and was cut with Hi-Fi enthusiasts in mind.

FLEXIBLE PAINT

RAM COTE, famous for "new leather color in a spray can," has now introduced a flexible paint. This paint can be applied with a brush to leather, leatherette and vinyl, and create a "refinished" effect. It leaves a durable, non-bleeding finish as flexible as the leather itself, and it resists mildew and alkalies, heat and cold, salt air and alcohol.

TERRIFIC TUMBLERS

For after the race, Vilem B. Haan has designed a 14 oz. tumbler set decorated with 40 different foreign and sports car emblems in 14k gold outlined in black. The glasses feature a heavy bottom which helps prevent spilling, and come in either sets of 4 or 8 glasses.

(Continued from page 23)

At low speeds, say up to 35 mph, and no matter how gently the wheel is turned for a curve, there is an immediate necessity to cut back to correct. Not dangerous, but it's there. But as velocity increases, the feeling is less acute, until at about 50 mph the condition disappears. Steering becomes effortless.

There is not enough engine and not enough speed to get into a drift. Besides, it feels a lot more comfortable when you're *pulling* around the corner. There is very little lean, and what there is, is unnoticeable from the cockpit. It gives the driver a lot of confidence.

The ride is exceptionally good for a car with only 70 inches of wheelbase: small bumps are absorbed by the suspension and never get to the "frame". No pitching was noticeable, and the shock absorbers must certainly be very much oversize. They work well, and it takes a choppy washboard condition to make you aware that you are not cruising on a new turnpike.

The car is small, and this quality is more than apparent when entering and exiting. It's one of the sit-down-first-then-put-the-legs-in type. If you're average in height you can do it easily; if tall, you'd better be agile. Once in, however, you're in for a pleasant surprise.

The seat appears to be nothing more than a mat spread over the floor. Examination showed that it was actually a soft, padded mat suspended on rubber impact-absorbing adjustable-tension straps. The one-piece cushion is anchored by tap screws on the sides, and these hold it securely. It is surprisingly comfortable despite the lack of fore-and-aft adjustment.

The seats have no bucket-affect whatsoever, but you don't seem to miss it. When driving alone, the driver knows what he's going to do and braces himself; with a passenger, the two occupants support each other very firmly. With the roof up two people are a snug but comfortable fit; with the roof down, we carried two passengers a pretty fair distance without interfering with the operation of the car or seriously discommoding the passengers. The absence of a tunnel provides a lot more passenger space than might be at first supposed, but over the winter months its not a good idea to ride with someone you don't like.

The roof is good-quality rubberized canvas that can be erected quickly and easily. A rolled insulation bond is sewed on to every edge all the way around, sealing off any drafts. The sidecurtains just drop in and pop out, secured in place by a single snap fastener that secures the vent slit (inadvertently we once closed both doors with these snaps fastened on both sides, and had to solicit the aid of a passing youngster, whose arm was small enough to squeeze between the top and the cur-

(Continued on page 48)

BERKELEY SPORTS

(Continued from page 47)

tain). However, the abundance of glass area (clear vinyl) cut into the top and the design of the curtains provide about 320 degree visibility. The remaining 40 degrees of blind spot are located where visibility is least needed—the area the driver can see by merely turning his head.

The steering wheel is located close to the dash panel. It is a position comfortable for most any driver, but long legs seemed to have difficulty clearing the edge of the wheel. However, this did not interfere with control. Foot pedals are the conventional clutch, brake and accelerator located in the conventional places. Since there is no adjustment on the seat, one either fits or one doesn't. There is no middle ground. The car needs a foot rest next to the accelerator; over a long stretch the throttle foot had a tendency to "go to sleep".

The instruments include a speedometer (calibrated to 120 mph!), an ammeter and a fuel gauge. Apparently the manufacturer feels there is no need for a temperature gauge on an engine that is awfully difficult to overheat, and there is no oil under pressure. All are well placed, readable, and well illuminated at night, without the fault of blinding the driver, and the instrument lights can be turned off by a separate switch if the driver desires. The small controls are well placed, too. They are unmarked, but there are only three of them—running lights, dash light switch and electric wipers. The choke is under the dash but it's easy to locate and operate. The handbrake locks the rear wheels with very little pull, and is located to the left of the driver and out of the way.

Storage space, because of the physical size of the car, seems inadequate; yet really there is plenty. Inside the cockpit, the entire underside of the dash is one big shelf, large enough to carry all kinds of assorted gear and even large enough for small cases. Cigarettes, scarves, gloves *et al* can be carried in the sizable door pockets.

The entire rear of the car, running from the seat backrest to the bumper, is all available for storage space, occupied only by the spare wheel. After turning the two Dzus keys that lock the trunk, the cover hinges forward, exposing a jump seat suitable for one small child. An adult cannot physically fit into it. Either of the two spring-loaded snaps may be pushed, completely detaching the lid. The spare wheel is stored where the legs would normally be located if the jump seat were used.

The release of another Dzus at the rear of the jump compartment removes another panel and exposes a cavernous space where the top, tonneau cover and tool set is stored. We noticed that by merely trimming away a bit on the fiberglass at the edges, it would be possible to store the spare in here, too. This makes the entire jump seat space available as more readily accessible luggage storage. And with the top up this section can be left open permanently, making access a lot easier. Since this section hinges from the front, it is necessary to unsnap the roof to put anything in or take anything out.

The "frame" is set inside the beautifully-finished fibreglass, giving a full bellypan effect, except that the body is cast as a one-piece unit. With the top up the sealing is perfect, except for minor drafts entering through gaps in the side curtains. Even in a driving rain, our car remained dry.

To erect the top, it is necessary to assemble the cross piece, which is composed of two half-sections joined at the center by a male-female joint. The roof snaps align well, and the whole operation can be done a lot quicker than it would take to read the directions on how to do it.

And it is much the same with maintaining the car. After twisting a single Dzus, the hood is held up by a rod that locks in a slot. The spark plugs are there where you can get at them. The battery, master cylinder, ignition coils, wiring, carburetors, fuel tank, drive chain, and everything that is serviced can be reached from above—easily. And all the running components—steering gear, universal joints, etc.—are accessible from the aft side of each front wheel. A screwdriver, pliers, and a two dollar grease gun puts you in your own maintenance business, and you could do most of the jobs dressed in a tuxedo. It's as simple as that.

Another feature that impressed us was the efficiency of the headlights. Incidentally, the headlights on our car look as though they were dropped on the fenders as an afterthought; actually they were. On non-export British models, the headlight is faired into the fender; in this country several states have refused to pass this faired-in headlight on their safety inspections. However, Tony Pompeo assures us that you can order your Berkeley with the headlights faired-in, if you wish, and take your chances on inspections. Any way you take it, the bulb is a real, honest-to-goodness twelve-volt *sealed beam.*

There is no provision for a heater in the car, and it would be difficult to mount one. Without heat, the car cannot honestly be called all-weather transportation. Considering its displacement it's quite lively, although another 172 cc would not be unwelcome, especially on the hills. But these faults are balanced by the solid, beautifully-finished body with every snap and clamp placed in exactly the right spot. It's truly a fun-car on an economy budget —the total cost of ownership has to be low —and there's one thing for sure: you'll save money on parking meters!

Len Griffing

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SADLER SPECIAL

(Continued from page 37)

ing parts, for example pistons were selected which had been machined to the smallest permissible diameter and these were installed in the block having bores machined to the maximum diameter. This was equipped with a single four barrel carburetor making the equivalent of the 200 HP version of the 1956 engine.

This engine was approximately the same length as the TR2 which made it possible to mount it in the same location. The TR2 flywheel, clutch, bell housing and transmission were retained. The TR2 flywheel was machined and redrilled to match the flange on the Corvette crankshaft. An adapter plate was made to enable the TR2 bell housing to be attached to the Corvette engine. This was made from ¼ inch steel plant. It was cut with a torch and marked and drilled to match the holes in the Corvette and the TR2.

The TR2 gearbox has proven to be very reliable even when handling the greater torque of the V-8. It was given a real workout at Thompson where (except for short bursts on the straight) it ran the entire race in third).

A semi-rigid method of mounting was necessary as there is very little room in the frame for engine movement. New front motor mounts were made from ⅛ inch mild steel plate. Shock absorber eyes were welded to the outer ends so that the rubber bushings made for these eyes could be used, isolating some of the engine vibration.

A lip or flange was formed on each of the mounts for added stiffness. The lip on the right extends back and that on the left folds forward to clear the block due to the offset of the cylinder banks. The inner ends were bolted to the machined surface underneath the water pump.

Where to mount the generator so as not to interfere with the closing of the hood, was a problem. Bill solved this by bracketing it to the frame underneath the left side of the engine. Since the engine movement relative to the frame was very small, it was possible to keep a relatively constant belt tension. This was driven by an additional pulley at the end of the crankshaft. The original pulley has about one inch of its inner diameter which extends over the shaft. An adaptor shaft was machined and pressed into the outer end of this pulley. Another pulley was mounted on the outer end of this new shaft.

Final drive ratio was changed from 4-1 to 3.54-1.

A homemade radiator was designed to use all the area that the chassis and body will allow.

An airscoop was added to the hood which serves the double purpose of providing clearance over the carburetor and supplying cool air to it.

This engine proved to be very reliable. At first, Bill experienced difficulty with the carburetor flooding in the corners. To correct this, he lowered the float level ¼ inch. Lowering the float level causes the mixture to be lean so main jets about five sizes

larger than normal were used to correct this.

At the Watkins Glen Race in September 1956, Bill found that he could not use the entire potential of the new engine due to wheelspin which occurred even in top gear. He reasoned that this was due to the high rear roll stiffness which caused the side thrust developed in a turn to lift a wheel. To correct this, he relocated the roll center at the rear to about four inches above the ground. This was done by removing the panhard rod originally used and replacing it with a locating device of his own design. It consists of a steel frame made in two sections and hinged to conform to the relative up and down motion between frame and differential due to the flexing of the springs. The front of this device was attached to the lower part of the car frame. At the rear of the device is a pin which passes through a hole in a steel plate attached to the differential.

Although traction was considerably improved with the new locating device, it still left much to be desired. Bill felt that the logical way to get still more traction was to use an independent rear suspension.

While these alterations were still in the planning stage, Bill acquired a reconditioned ENV pre-selector gear box. This seemed made to order for the new set up. It could be used without a clutch (thus eliminating the weight and inertia of a clutch, pressure plate and flywheel) as the bands in the gear box serve as a clutch (similar to the Model T Ford). It has 4 closely spaced forward speeds, (3.31, 1.95, 1.35, and 1.00) a reverse. It permits very fast shifting as the desired gear may be selected at any convenient time, the actual shift being accomplished by depressing and releasing a "clutch" pedal.

With this gearbox it was possible to attach the driveline directly to the engine crankshaft at one end and to the input shaft of the gearbox at the other. The gearbox in turn could be coupled directly to the final drive housing.

As plans progressed, it became evident that if the new gearbox and the IRS were to be installed, it would require extensive alterations to the frame and the end result would be a compromise and rather butchered chassis. The logical solution was to build a new frame designed for the new rear suspension system.

Since Bill planned to race in England and on the Continent, his decision to build a new frame was considerably influenced by the FIA ruling which requires the interior of the cockpit to be 47" wide. The body panels of the special allowed ample width but the actual width of the cockpit was restricted by the upper framework in his early frame. This might be a technicality which would bar him from FIA controlled races and this, therefore, was the determining factor in his decision.

The new frame is made of 3½ inch diameter, 14 gauge seamless chrome-moly-tubing weighing 3.2 lbs. per foot. Stands of 16 gauge steel are built up in front to provide attachment points for the upper A arms. Fore and aft of the cockpit are well-braced roll bars of 1⅝ inch tubing.

The Jowett Javelin king pins and upper A-arms were retained. However, a transverse leaf spring replaced the torsion bars

(Continued on page 52)

SADLER SPECIAL

(Continued from page 51)

and the lower control arms of the original chassis. An extension at the bottom of the king pin lowers the pivot point 2½ inches.

The new chassis is equipped with Austin Healey wire wheels and brakes. The Austin Healey outer front wheel bearing is the same as the Jowett's but the inner one is larger, so a sleeve was made to go over the Jowett spindle to make up the difference in diameters.

The Morris Minor steering gear was retained; however, Bill felt that the Ackerman effect of the original front end caused the wheels to toe-out too much on the turns. It was reduced by moving the entire rack and pinion assembly forward.

Bill used a 1940 Ford V-8 rear end as the basis for his new final drive. The axle housing tubes were cut off from the gear housing. The driving torque is transmitted from the ENV gearbox through the Ford ring and pinion to short axle shafts. These shafts were made from Ford axles, cut off and machined at their outer ends for a thread, taper and keyway to accept the companion flange from a Spicer series 1310 U-joint (1950 Canadian Chrysler).

The sides of the final drive housing, exposed by the removal of the axle tubes, were each machined to locate an adaptor to house an SKF 209 roller bearing.

These roller bearings perform two important functions; they support the outer end of the short axle shafts and they locate the backing plates concentrically.

The inner races of these roller bearings ride on the turned-down outer diameter of the U-joint companion flanges which in turn are secured to the stub axle shafts by taper and key. The bearing housings were made slightly narrower than the width of the outer races so that the bearing extends beyond the face of the adaptor, locating the brake backing plate, an oil seal housing and a bearing retainer.

Sandwiched between the Chrysler U-joint companion flange and the U-joint itself is an adapter plate made from quarter-inch steel plate. It has locating rings or steps machined on its face to match similar machining on the companion flange and the U-joint, insuring concentricity. This plate serves as a means of attaching the inboard mounted brake drums.

These Spicer series 1310 U-joints were designed for 3 inch dia. propeller shafts. Bill cut the Chrysler's propeller tube away and machined the end of the U-joint, which was originally pressed into the tube, down so as to be a press fit in GMC 3 ton truck propeller shaft tubing. Then he cut a GMC propeller shaft leaving a short piece of the tubing attached to the spline. Into this tubing he pressed the machined end of the Chrysler U-joint and arc welded them together. Riding on these sliding splines are 1350 series Spicer U-joints (GMC 3 ton truck—around 1950). These U-joints are in turn attached to the stub shafts.

The stub shafts are made from GMC truck midship stub shafts. The tubing was cut away from the splined end. A piece of

(Continued on page 54)

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SADLER SPECIAL

(Continued from page 52)

half-inch steel plate was bored out to be a heavy press fit on the large end of the shaft exposed by the removal of the tubing. This plate was then arc welded to the shaft. After welding, the plates were machined in a lathe so as to have a true face and a locating ring, forming a flange for the Austin Healey rear hubs. The hubs bolt to the flanges with four ¼ inch bolts. These stub shafts are carried by two 6208-RS SKF ball bearings. These bearings are sealed on one side and they are installed in the outer retainer so that the seals are to the outside. The inner bearing rides on a machined surface diameter of the end yoke of the GMC U-joint which is splined to the shaft. The outer bearing rides on the surface of the shaft itself. These bearings are retained in a carrier machined from 3 inch pipe.

Any lateral movement between the shaft and the bearings is prevented by shoulders on the shaft and end yokes and by a tube spacer between the inner races of these bearings. Similar movement between the bearings and the housing is prevented by leaving a shoulder between the outer races of the bearings.

The rear suspension is unique. It consists of a single transverse spring (made by a local spring shop to Bill's specifications) and long, wishbone-like, lateral control arms rigidly connected to the wheel hubs. The arms are made from 1⅝ inch diameter chrome moly tubing having 0.160 inch wall thickness. They pivot approximately two inches below the bottom of the differential housing. The latter carries the pivot pins for the rear of the arms and also provides a seat for the rear spring. The front pivot points are attached to the rear cross member. The outer ends of the arms are welded to quarter-inch steel plates, which in turn are arc welded to the hubs.

By placing the control arm pivot points very low underneath the differential housing, the arms could be made extra long, both steps helping reduce camber changes as the wheels ride over bumps.

The engine which powered the car during the latter part of 1956 racing season was replaced with a Canadian-built, modified version of the 283 cu. in. 1957 Corvette engine. This engine is equipped with the latest Duntov cam and special light valves (seating on inserts). The special Delco Remy dual point distributor has no vacuum advance.

The engine is mounted one inch to the left of center in order to give more room for the driver's feet and the pedals on the right side of the engine. This also tends to partially balance the weight of the driver.

After he returns from England, Bill plans to install a fuel injection system of his own design on this engine, this system to be basically similar to the one used on the TR2 engine.

He feels that the present Corvette fuel injection system is unnecessarily complicated for competition and that the airflow is too restricted for maximum output.

Bill took the car to Harewood Race

(Continued on page 56)

SADLER SPECIAL

(Continued from page 54)

Course for testing prior to his departure for England. The body was left off to permit the action of the suspension system to be observed and to enable adjustments to be made quickly.

The car ran remarkably well and the acceleration was fantastic, being comparable to that of the specialized drag machines. The *two* streaks of rubber showed clearly the value of an IRS for a car using an engine of this potential. As an experiment, two leaves had been left out of the rear spring, but after testing, it seemed advisable to replace them. A stiffer type of rear shock absorber seemed indicated and it was necessary to lower the float level on the carbs to prevent flooding on the curves.

A week later, Bill Sadler and his wife Anne left for England, where he was to spend a year working for John Tojeiro (designer of the A.C. Ace). Naturally, the Special accompanied them, and Bill was able to race it extensively on such interesting circuits as Goodwood, Snetterton, Brands Hatch, and Oulton Park. Hillclimbs at Shelsley Walsh and Prescott and a standing kilometer sprint at Brighton (we'd call it a drag race) filled in the remainder of his calendar. The latter event provided him with his most outstanding performance of the year, as he took F.T.D. against all comers, 260 of them, race cars, sprint specials (dragters?) and all.

During the season many practical lessons were learnt and applied, but only by burning the midnight oil. Daylight hours saw Bill busy at the Tojeiro Car Co., where he did all the design, pattern and final machine work on a rear-mounted gearbox/final drive units for Tojeiro's new F-2 car and a Climax 1100 cc car.

The four barrel Rochesters persisted in flooding in the turns, causing the engine to cut out. All attempts to correct this by adjustment or modification came to naught, so Bill finally replaced them with two Ford Holley carbs, which dropped the horsepower to 250 @ 6500 rpm. Even though the Brighton course is straight, the dual quads weren't used, so his performance there is all the more creditable.

The suspension came in for adjustments and changes, as might be expected on such a novel design. Rear radius rods were added to cure a tendency to hop under acceleration. Lower wishbones were installed in the front together with Armstrong spring-shock units in order to correct toe-out during hard cornering.

The next time we see this car in these parts, we will look for the streamlined headrest that Bill talks about. It may sport a new paint job, a well-earned coat of British Racing Green perhaps. (The British press referred to the body, which has been on two different cars now, as "scruffy".) We heard him mutter something about Bendix disc brakes before he went to Europe, perhaps these will be the next change. There will certainly be improvements as Bill sees the need for them, for as no one can deny, he doesn't mind making changes.

Ed. Monroe

THINGS TO COME

(Continued from page 25)

It's seldom that Ferrari has a car tested and ready to go six months ahead of schedule, but that's exactly what's happened with this new V-6. It first appeared at Reims in Formula II form, displacing 1490 cc, (90.8 cu. ins) where it proved itself to be just as fast if not a bit quicker than the FII Cooper-Climax. They went back to Maranello and began to bore out two blocks. One was set at 2200, while the other was taken out a bit farther to displace 2385 cc. Ferrari knew he was on to a good thing and set test drivers hustling with the new machine. Tragically, Ing. Fraschetti was killed at Modena when he was trying the new V-6; but development went on. As is typically Italian, fantastic horsepower claims were being made, Maranello quoting 290. Whatever the exact figure is, and 250 bhp is probably closer to the truth, the car goes—and goes well; it is light — dry weight is reportedly less than 1200 pounds. Brakes are Lancia-Ferrari D-50. The whole car is a scaled down version of the big V-8 in its ultimate form that has now been scrapped. A Ferrari mechanic obligingly stuck his finger into the V-6's tank at Casablanca to prove that they were running on "benzina supercarburante"—not alcohol or any other special fuel. Collins and Hawthorn spent the first practice session learning their way around the new circuit, but by the second day the V-6 was third fastest. If the Argentine "Temporada" comes off according to schedule, the Ferrari is going to be a very real threat.

The dark horse off in the middle distance is BRM. After a year or more of activity behind closed doors, Raymond Mays and Peter Berthon have finally gotten their car to the point where it is reasonably reliable and will corner, and have all the "gow" characteristics of a quarter-mile dragster. Casablanca was one of the few times in 1957 that this car started with all of the current opposition on the starting grid. Harry Schell and Jean Behra have both driven BRM's to victory in small events during the year, but both times no works Vanwall, Maserati or Ferrari cars were on hand. But now that the car seems to handle properly and is safe enough to permit driver confidence, there is an acute shortage of driver talent.

Rumor has it that both Schell and Behra will leave Maserati for BRM in 1958, and even though Trintignant's third place at Casa in the English car was overshadowed in some respects, it still was an achievement. It proved that the car will last: it averaged 111.2 mph for 2 hours and 19 minutes. The BRM, a very attractive machine to look at, is much prettier than the Vanwall. It is powered by a four cylinder dohc unit with a fantastic bore and stroke ratio. Bore is 102.87 mm while the ultra-short stroke is only 74.93 mm. It uses two double-choke side-draft carburetors. Brakes are disc-type with a single disc fitted at the rear, centrally mounted off the differential housing. Wishbone suspension at the front, coil springs all around and slight chassis revision has improved the car's road holding immensely. The BRM is considerably lighter than its

(Continued on page 58)

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THINGS TO COME

(Continued from page 56)

adversaries, and this favorable power-to-weight ratio will stand it in good stead in 1958. If BRM can sign on Jean Behra and Schell, with one other up and coming young driver (Australia's Jack Brabham for instance) they will have a powerful trio to meet the continental and Vanwall opposition.

And what of Maserati? Their 250F six cylinder has been running well on nitro and alcohol all year. Alfieri's twelve with 24-coil ignition never has been as fast as the six, but things could be different in '58 with this multi-cylinder engine cooking on gasoline. Masers have time, now that the 4.5 V-8 is out of production, to get the twelve running properly.

Looking at Formula II (1500 cc racing) for a moment, Colin Chapman's Lotus single-seater underwent growing pains in 1957, but finally overcame the gear selector difficulties and rear end gear-wear problems. If Colin can properly divide his time among putting the new "Elite" coupe into production, looking after Formula II, and working on his sports car development, he will be accomplishing a lot. A shortage of space is hampering him at present, and the large amount of money that has been fed into development of his two newest cars has left him gasping. But 1958 could be Chapman's year. His Lotus organization is making an all-out effort to get things moving this winter. U.S. distributor Jay Chamberlain reports speeds in the neighborhood of 170 mph from the '58 team cars coupled with handling characteristics to match.

John Cooper has literally put the 2 liter Cooper Climax on the map in 1957. With Jack Brabham at the wheel of a works car at Monaco, the little bomb gave both Trintignant and Masten Gregory fits. At Reims in July, on the occasion of the year's first Formula II race, the Cooper, this time running 1½ liters, went round and round in a very close duel with Trintignant in the FII Ferrari until the Cooper's valves packed up. On the Nürburgring, Salvadori's Cooper gave Edgar Barth's Porsche RS a terrible time while the English car's rear-suspension lasted. At Casablanca it was the Citroen gear boxes that packed up both Coopers. But in England they have been enjoying more success. They take the honors at practically every club meeting—events that do not require the long distances.

But what of sports car racing in 1958? The CSI has limited manufacturers to 3 liters (183 cu. inches)—thus bringing an end to the 4 liter Italian monsters. Most impressive cars, the 4.5 Maser and the 4.1 Ferrari, but do they honestly mean much to the average sports car buyer? It takes a Moss or a Fangio to handle one properly, and in the wet they are simply unmanageable. We like the noise and the feel of a big hunk of machinery too; but it seems a whole lot more challenging to get maximum performance from a smaller displacement. Forgetting about the cries of "they're going too fast"—and "what does it prove?" etc. etc., it's much more to the point to brag about a Le Mans win with a 3 liter than it is with a 4.9. Both

Ferrari and Maserati have an outstanding 3 liter at present. The Maser 300S is so well known to SCI readers that little mention of it is required here. However, Maserati will surely improve the car for '58; it's already using 4.5 liter-machine brakes, and even though the big V-8 was a hairy monster, design and development of the engine will pay dividends in preparing the 3 liter for 1958's strong competition. Ferrari's new 3 liter car is ready and waiting, with the engine developed out of the 250 Europa power plant. Ferrari's 3 liter V-12, with a single-overhead-cam per bank, may conceivably be fitted with injection for 1958. The car also has new brakes, a crying need in some earlier competition Ferraris.

Jaguar is making competitive noises again. If Coventry comes back, officially that is, it will remove a heavy burden from the shoulders of David Murray and Ecurie Ecosse. Contrary to a report at the time of the LeMans story, the Jaguar factory has not cooperated with Ecurie Ecosse to any inordinate degree. A 2.9 competition engine is in the works to fit the new formula.

It goes without saying that Aston-Martin will be back with an improved DBR1-300 (SCI Dec. '57), and rumors have been circulating recently concerning the possibility of Aston's building a Formula 1 machine. This would come as no surprise, since both John Wyer and Reg Parnell have considerable influence with David Brown.

The sixty-four thousand dollar question lies under a sheet in Stuttgart. Mercedes has eight 300SLR's just sitting about in the museum and warehouses of the Untertürkheim plant. H. U. Wieselmann, top German automotive editor, writing in his "Das Auto", points out that this is Mercedes' big chance to re-enter sports car racing with a ready-made car — the 3 liter straight-eight SLR. With its mechanically-operated valves and direct injection, the car achieved a horsepower per liter output of 110 bhp in 1955; this is a figure not yet attained by the Italian or English constructors. Thus it is reasonable to presume that the SLR could come back in its 1955 form and sweep the board in 1958. Up to this writing there has been nothing but denial from Stuttgart, but like the mind of a Hollywood star, it can quickly change. It is most likely that Mercedes will make at least a limited attempt at 1958 sports car racing. The Ferrari 250 Europa has beaten the 300SL whenever the two cars have met, and the car-buying public is tending to forget about the unbeatable "Silver Screamers" of 1954-55. They might bring back the same 300SLR; but even more probable they will bring out an improved version of this machine—better streamlining, suspension changes, combustion chamber alterations. Certainly Uhlenhaut could brew up a most fascinating motor car after two years of quiet concentration. If Mercedes jumps, it might induce BMW to jump also with their V-8.

Whatever happens, 1958 Formula and sports car racing promises to be the most interesting and the most meaningful season seen in many a year.

—Jesse L. Alexander

COMPLEAT ANGLIA

(Continued from page 29)

The Anglia that *SCI* borrowed had treatment number 4, i.e., the Power Master head, as it is called, in conjunction with the larger paired Solexes. Engines in cars lent for press testing by conversion specialists, in England anyway, seldom seem to conform exactly to catalog specification, and this one, as usual, was a deviationist in one respect, namely, a fabricated four-branch exhaust system fitted in place of the normal Ford offtake. Willment experiments indicate, however, that the fancy bowels are only worth about two horsepower, and this gain—confined to the top end, they say—was probably offset in this case by slight but general deterioration throughout the engine; it had done over 20,000 miles, mostly under the penal rpm and load conditions that are the common lot of machinery used for development work and press testing.

Obviously, performannce data on conversion jobs like this doesn't mean much unless you relate it to figures for the stock line. Regular Anglias and Prefects, then (these models are equal in power, the four-door Prefect being the heavier by around 56 pounds) have a timed maximum speed of between 70 and 71 miles per hour under neutral conditions, do the standing quarter mile in about 24.2 seconds, and go from forty to sixty in high in just over 21 secs. The Power Mastered Anglia, by comparison, averaged 82.7 mph in opposite direction runs for a flying quarter, a 17 percent improvement; lowered the standing quarter time by nearly 3½ sec to 21 flat; and almost halved the 40-60 push to a startling 11.5 secs.

Willment, speaking from knowledge of converted Anglias' paces in English club races, was mildly disappointed by the maximum speed we clocked. At *SCI's* best one-way speed over the quarter, 83.1 mph, the demonstrably overgeared Willment-Anglia's rpm is 5600, some 400 below peak, so the afore-mentioned deterioration really hurts. This is still 1200 revolutions per minute faster than the basic sidevalver's peak and probably quite fast enough for safety in the hands of the great anonymous public. More important is the fact that the converted car cruises at or even a bit above the stock Ford's maximum.

An incidental issue that the non-standard exhaust system tended to confuse was the assessment of under-hood noise. The Willment intake manifold repositions the Solexes at a level that leaves no room for air cleaners, but the gurgitations resulting from open intakes were blanketed by the fairly hearty exhaust note. Mechanically, the Power Master setup is just as quiet as a normal 100E; this is not unexpected, for the overhead inlet valves take a reduced clearance (0.008 instead of 0.015/.135) and the cast-alloy rocker-box covers are good and thick.

Compared with the phenomenal 40-to-60 time quoted above, the various gearbox-aided accelerations are good without being spectacular. The reason, of course,

is no further to seek than a three-speed box with a jump of no less than 2.01 between second and top. This is a handicap that puts the Power Master in its least masterful light through no fault of Willment's. What can be said in extenuation of this Anglia/Prefect transmission is that the shift lever, unlike that of the larger Consul, Zephyr and Zodiac Fords, comes at you out of the floor instead of nesting on the column. In the nature of floor shifts, it has a positive and solid action.

For a four produced in a volume that is exceeded by very few British-built engines, the Eleven-Seventy-Two, in stock and Power Master forms both, is a smooth little proposition. In spite of the drastic elongation of the rev ladder that the Willment furniture entails, there is no noticeable roughness anywhere on the scale. Starting is not impaired and idling is steady. Due to slightly peculiar throttle linkage geometry on the test car, it was hard to sneak off the mark as gently as could be wished in city traffic. This, we are told, is being rectified.

The most striking single aspect of Power Master performance is its enormously-magnified punch around the middle of the range, for which credit is due to an increase in maximum torque from 52 to 66 pounds feet. This would be a real asset even if the Anglia had a four speed box with a close third ratio like the Morris Minor 1000; but the Ford box, with only three strings to fiddle on, makes it doubly valuable. Under typical English road conditions, with heavy traffic, minimum overtaking room and maximum blind-curves-per-mile, the Willment stuff radically reduces gearshifting frequencies and at the same time enables much improved averages to be maintained with less fatigue.

It isn't easy to make a fair comparison between stock Anglia and Willment Anglia fuel consumptions because the term "hard driving" means different things in the two contexts. In average use, it's probably fair to estimate that the untuned car goes three to four more miles per U.S. gallon. The Power Master's higher compression ratio—8.5/1 as against 7/1—obviously offsets to some extent the manlier thirst of the bigger and duplicated carbs. As applied to *SCI's* mileage, "hard driving" is certainly appropriate, for it included all the maximum speed and acceleration test timings.

The conversion job, of course, involves stoppering the redundant inlet ports in the block, and blanks are supplied with the kit for this purpose. The printed instructions for the makeover seem clear and comprehensive as a whole.

Cylinder head material is the well-known DTD424 aluminum alloy, used in all modern Jaguar engines and in the Raymond Mays Ford Zephyr cylinder head (SCI, Aug. '57). The inlet valve seats are made of austenitic cast iron. Direct seating valves were tried during the development stage, but ferrous seats give longer life.

Willment's rockers are chill-cast steel and give one to one leverage. Stock Ford exhaust-valve springs are retained; but on each intake valve two springs register a combined strength of 115 pounds. On conversions that Willment does, the ex-

(Continued on page 62)

COMPLEAT ANGLIA

(Continued from page 61)

haust valves and port shapes and sizes are left alone, but there isn't anything to prevent a customer with advanced ideas from gouging out these ports and fitting special valves. The inlet valves supplied with kits are of modified XK Jag origin, with 1⅜ inch diameter heads and 5/16 inch stems.

Although Willment has experimented with several different compressions, ratios above the adopted level of 8.5 to 1 show no extra return. With the normal ignition timing, 5 deg. BTDC static, the test car was fully impervious to pinking on fuel of around 90 octane.

This wouldn't be the place for a general evaluation of the Anglia as a car, even if the particular one tested was a current model, which it wasn't. Nevertheless, prospective buyers of a conversion worth a 17 percent increase in maximum speed are entitled to know what hazards, if any, the full exploitation of such a bonus entails on the road. The short answer is None; and this verdict is borne out by the spectacle, common enough in club races around the British circuits any summer weekend, of hopped-up Anglias and Prefects being thrown through every variety of turn with impressive abandon and immunity from disaster. Over rippled surfaces the ride, naturally, isn't as flat as a Déesse's, nor does this small utilitarian automobile corner like a G.P. Maserati; but on the other hand it has no special vices and, both in a straight line and going around curves at speeds its designers probably never budgeted for, its safety factor is liable to surprise you. Sense of control would be better still if the steering wheel was about an inch lower; as it is, the driving position is slightly reminiscent of a beagle begging for biscuits.

Good cornering properties of the test car no doubt owed something to two Willment specialties: an extra anti-roll torsion bar at the front and trailing radius rods linking the back axle to the frame sidemembers. When cornered brutally, stock Anglias are prone to some rear-axle dance, but the radius arms seem to cure it entirely. Both these Willment appendages will likely be available in the U.S., either with or without engine kits, before long.

Power Mastered Fords did well in a number of minor British events during 1957. One of their best scores—demonstrating ability to hold together under a prolonged ordeal—was third place in the annual six-hours team relay at Silverstone. Twenty-five teams competed. At a sterner level, a Lotus-Ford with P.M. embroideries pulled off *Autosport's* seasonal series production sports car championship, which now carries national kudos.

. With its inlet valves inverted, the homely Eleven-Seventy-Two takes a step into Society, for Rolls, Bentley and Rover all favor this layout. But it's doubtful whether any of them equal the converted 100E in specific output.

Dennis May.

AUSTIN A55

(Continued from page 39)

Across the broad deserts of California, Nevada and Utah we cruised flat-out all day long, indicating about 80 mph on the level and over 85 on downgrades. On long upgrades we found that the A55 had exceptional pulling power for a 1500 cc sedan and that it could walk away from class-competitors that admittedly can take it on the straight. Between Los Angeles and Bonneville there are four mountain passes, all at least 7000 feet above sea level. Loaded as it was, the A55 pulled each of these in top gear at about 40 mph. There was just one exception where the last quarter-mile before the summit had to be taken in third.

Third gear's ratio is frustratingly low. It's the gear you want to drop down to for passing at normal highway speeds. However, it's absolutely *done* at 55 mph and there's nowhere to go but into fourth, where very little urge is left for overtaking. On up- or down-shifts we found it impossible to beat the synchromechanism. In fact, rushing a shift gets you nothing. The level will *not* enter its slot, regardless of pressure, until the gears are ready to mesh congenially.

The A55's steering has the fine, light, quick, live character that is practically inherent in the light car and thoroughly alien to the heavy Detroit product. Heavily laden as we were on our cross-country runs, the steering remained consistent when cornering, even on wet pavement. With only the driver aboard, the tail seemed to wag the dog a bit during hard, fast cornering. Body roll was imperceptible to occupants . . . and nearly so to the camera, as you can see. The A55's ride is taut and firm, but not even remotely as harsh as that of the MGA. Small surface irregularities are not totally erased. On the other hand, really severe bumps that would be punishing to passengers in most Detroit cars are smoothed out in stride by the A55.

Its brakes are very good . . . nothing better is required of the family-type road machine. Fade during the ten emergency-stop test was slight and pedal travel was scarcely affected, although the car began to pull strongly to the right near the end of the brake-test series. There is no perceptible nosing-down of the front end and there is minimal need for the occupants to brace themselves during hard braking.

The A55's appetite for fuel is reasonably moderate but not remarkable. On one 704-mile run in hot weather, driving flat-out whenever possible and climbing steadily in altitude, our test car averaged 17.8 mpg. During acceleration and top-speed runs we recorded 18.5 mpg. Highway cruising at 55 to 60 mph produced a figure of

(Continued on page 66)

STORE

(Continued from page 27)

$3500, and, lucky man, he had a deal. A few weeks later, the thing came off the boat. After an hour on the end of a rope, it started. At 45 miles an hour, a medium brake application would throw it three feet to the right. The clutch was of a clutchness that took a dollar's worth of rubber off the rear tires with every start. At ten-minute intervals, the engine-room burst into glorious flame. It steered like a Mark I Sherman tank—before they had the bugs out of it. In short, it was a disaster. Two years and three shops later, it was a pretty good 57S—and it had more than $8500 in it.

What is the moral of the tale? It is as stated above. Or, put another way, if the man with the walnut shells lets you guess right the first time, lock up your wallet, because he has plans for you.

Speak it softly, but it is not only the wily Continental types who will do you. The British know a thing or two, as well. In dealing with the British, for example, you need to know a whole new vocabulary, really a code. For example, the phrase, "nice runner." This means bring your own basket. Or, "late property titled owner." This means that for 400 quid you can put the seat of your pants where the very late (he died in 1929) Lord Bumblebottom put his. To expect more—that the car should go, for example, is virtually to accuse yourself of stupidity. But why go on?

That was the situation, then, coz, in the Fall of 1957. For the man setting out to buy a nice piece of vintage machinery the phrase *Caveat emptor* was not only a guide, it was a way of life. Nowhere in this broad land could you shop, for say, a 30-98 Vauxhall as you would for a Ford Ranchwagon. You were on your own, like an Eagle Scout parachuted into Red China to ferret out the secret of the new sweet-and-sour lobster recipe, and with about as much chance of getting out alive.

It was at this time, September to be exact, that Leonard Potter, a director of the Half-Way Garages in England, decided to come over and set up a vintage machinery store for the colonials. One could only wonder why no one had ever thought of it before. Mr. Potter *had* thought of it before, of course. He had thought of it for some years. A connoisseur of vintage machinery, he was a long-time competitor, too. He won the Monte Carlo rally in 1948—that is, he had it won when he went out to the *parc fermé* for the regularity run. Then he discovered he had left the key to the car in his other suit at the hotel. At that he finished third.

From 1946 to 1950 Potter was associated with Rodney Clarke, who has been building Connaughts lately, in the firm of Continental Cars, one of the best British shops. Continental did a considerable amount of trade with Americans, as did Half-Way Garages later on, and it occurred to Potter that if fine cars could be shown here in the flesh, rather than by photograph, business might be done. Accordingly he picked out some choice machinery, put it on the boat, rented a house in Haverstraw, a long-reach suburb of New York City, asked his wife to pack the trunks, and took off.

When I saw him, three weeks after his arrival, he had four cars with him, two more on the water, and others racked up in England. I was impressed by three things: (1) Potter's choice of cars; (2) The flawless condition they appeared to be in; (3) Their prices.

His intention is to bring in nothing that is common-place. For example, one of the first four cars is a Montlhery Midget, a rare specimen anywhere. I have not seen another in this country. Only 45 of them were made, in 1931-32. The Montlhery, also known as the C-Type, was a racing two-seater a tiny little thing, 746 c.c. engine, 8-inch cable brakes. It was a famed record-breaker in its day. It's an esthetically delightful car and it's good for about 75 miles an hour. Potter's specimen was restored at the factory and appears to be as near as no matter to mint. The proud owner had, unfortunately, given the restorers *carte blanche*, and was shaken to discover that he had spent 750 pounds. He had to sell it under distress conditions. The car is priced here at $2000—less than the cost of the restoration.

There have never been many chain-drive Frazer-Nash cars in this country. I've seen

only two. A good 'Nash rarely appears even on the British market, owners being notably clannish, and many of the cars having been badly flogged anyway. Potter is showing a Tourist Trophy *Replica*. Potter considers this one about as good as any he has seen. It's a good deal better than any I have seen. Its accelerative performance is roughly equivalent to that of a Porsche and its top speed is not far short at 95. It has a Lockheed brake conversion which removes one of the make's tricky habits: a tendency for wrap-around servo action to lock the front wheels. The solid rear axle takes getting used to, of course, and it eats tires, but it offers enchanting handling characteristics once you know it, and the gear-changes, since only dog-clutches are involved, are delightful. Everything on the car is new: paint, upholstery, chrome, top, curtains. $2000.

For types more staid and settled in their ways, Potter's Vintage Store will offer a 1937 P III Roll-Royce limousine, 80,000 miles, one owner, chauffeur-maintained (and what a hustler *that* boy must have been!) at $4500: I never saw a better Rolls-Royce in the 12-cylinder version. There's a 1938 4¼ liter Bentley, too, as beautifully-maintained a 20-year-old car as ever came down the road, for $3950.

Still aboard ship when I saw Potter was a Silver Ghost Touring car which I imagine will be bought at dock-side if the word gets out, and Peter Hampton's famous hybrid Bugatti, the only Bug of its like in the world. Hampton must have put the equivalent of $10,000 into this car, a hard-top coupe. He built it to prove his contention that Bugatti should have made, before the War, a blown four-cylinder passenger car. (He did build one, but it was not for sale, it was made as a wedding present for his daughter Ebee.) Hampton put a Type 39A blower on a Type 40 chassis and mounted a 55 coupe body. He upholstered the result in grey leather, put eight Jaeger-type instruments into the new walnut dash, fitted an electric heater and a few extras: 10-inch headlights, trunk light, foot-operated Cicca horn, silk blind on the rear window, Tapley meter, complete tool kit, battery cut-off switch and so on. It turns up 90 mph, cruises at 75 and idles at 500 rpm. It will sell for about $2500.

Because it would be obviously impractical, Potter does not plan to maintain a really large stock of vintage motor cars. If his plans work as he expects them to, he'll always have a few choice specimens on hand. But he is prepared to deliver almost anything on demand. If, for example, you cannot be happy until you've had a Morgan Super Sports Three-Wheeler with a J.A.P. engine hanging out in front, Potter will find one for you, have it thoroughly gone over by competent engineers in his own employ in England, restore it to any degree you like, and deliver it here for a previously agreed-upon price. Also, he will undertake to find cars within your own price range. If you specify, for example, that you want an Invicta, but that you don't want to pay more than $750 for it, he'll find a $750 Invicta for you if there is one.

Seems a great idea to me. The stuff is there, ready to roll, and it's the right stuff. Now, in Willy Frick's often-quoted phrase, all you need is the money.

Ken W. Purdy

Classified

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INDEX OF ADVERTISERS

Sports Cars Illustrated, February, 1958

AUSTIN A55

(Continued from page 63)

25.2 mpg, indicating a much stingier consumption under more leisurely driving conditions. Oil consumption during the 2000 miles was nil.

The fundamental character of the A55 is reflected in its bodywork. It is very solid, stylish in a restrainedly-gay manner, roomy, safe and, above all, practical. No rattles or squeaks developed in our long stay with the car. There is nothing grotesque or "typically-miniature" about its appearance. Visibility is excellent in all directions, passenger accommodation is spacious for four, will tolerate six, and headroom is surprisingly large. The below-dashboard parcel tray which extends across the body is a great convenience. It is complemented by a glove compartment which can be locked.

Passing through several rainstorms of deluge-magnitude, we found that the sealing of doors and decklid against rain is completely effective. The heater and defroster proved very comfortable in desert nights in the 40° F range. No-draft vents in both front and rear windows, in addition to their ventilating function, help to reduce or control the level of wind noise in the passenger space.

The A55's luggage space, enlarged considerably over that of the previous model, is four feet wide, three feet deep and just under two feet high. Tools are carried on a recessed tray high on the forward wall of the luggage space and the spare wheel and tire are cradled on a hinged tray underneath the rear compartment. The tray is lowered by turning a fine-thread screw drive with the car's hand crank until the spare can be slid out under the rear bumper. Manumatic models do not come with hand cranks, but a short, L-shaped tool is provided for spare-tray operation. With it the opening and closing processes are much slower than with a cranked handle. Since the tray must be lowered even to check air pressure in the spare, owners will find it worthwhile to (a) obtain a cranked or "speedwrench" handle and (b) to make the simple installation of an air hose that will permit inflating the spare without removing it from its otherwise entirely practical stowage space.

The A55 is not the lowest-priced car in its displacement-performance range, nor is it the most cheaply-made by any means. It's a highly durable, comfortable, well-built light car . . . a family car designed to build marque loyalty. The Manumatic clutch and the current Austin column shift, frankly, do not inspire us. Aside from these complaints we feel that the Austin A55 is a fine and desirable light car.

—Griff Borgeson

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